

VULCAN STATUE & PARK
Birmingham Industrial District
Atop Red Mountain off Vulcan Rd.
Birmingham
Jefferson County
Alabama

HAER No. AL-29

HAER
ALA
37-BIRM,
48-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

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HISTORIC AMERICAN ENGINEERING RECORD
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HAER NO. AL-29

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48-

Location: UTM coordinate: 16.519010.3705620. The Vulcan statue is mounted on a 124' pedestal in Vulcan Park, which is adjacent to, and southwest of Twentieth Street at the crest of Red Mountain, a ridge overlooking the city of Birmingham, Jefferson County, Alabama.

Present Owner
And Occupant: City of Birmingham Parks and Recreation Board

Present Use: Public park and observation area

Significance: The Vulcan statue is significant as an unusual American colossus created from local material, under technological constraints, to promote regional industry. The Vulcan statue was cast from Birmingham pig iron to promote Alabama's iron industry at the 1904 Louisiana Purchase Exposition at St. Louis, Missouri. A feat of the iron founder's art, the fifty-five foot tall Vulcan is reputedly the largest cast iron statue in the world. In 1935, Vulcan was moved to Red Mountain, where a landscaped park was constructed by the Works Progress Administration.

Project Information: This recording project is part of the Historic American Engineering Record (HAER), a long range program to document the engineering, industrial and transportation heritage of the United States. The Birmingham District Recording Project was cosponsored during the summer of 1992 by HAER and by the Birmingham Historical Society, Marjorie L. White, Director.

Historian: Matthew Kierstead, summer 1993

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INTRODUCTION-STATEMENT OF SIGNIFICANCE

The Vulcan statue, located on Red Mountain, overlooking Birmingham, Alabama, is reputedly the largest cast iron sculpture in the world.¹ Conceived by local commercial interests for the 1904 Louisiana Purchase Centennial Exposition held in St. Louis, Missouri, Vulcan was created from Birmingham minerals, and was intended to symbolize the spirit and industry of Birmingham, the city at the core of an industrial district which in 1904 was emerging as a major Southern industrial center, and was a major producer of raw iron and associated products. The casting of the fifty-five foot tall, sixty-ton Vulcan was a technically

¹The claim that Vulcan is the largest cast iron sculpture in the world has appeared, unqualified, in many sources. The decision not to repeat this claim here was made after much deliberation. In the research for this narrative, the following three experts were among those consulted regarding this issue: Betsy Fahlman, Professor of Art History, University of Arizona, Tempe, who is an authority on the depiction of industry in Art, and edits the "Industrial Archaeology in Art" column of the Society for Industrial Archeology Newsletter; John Schnorrenberg, Professor of Art History at the University of Alabama at Birmingham; Schnorrenberg's specialty is classical and medieval art, and he has researched Vulcan and the context of other colossi; and Robert M. Vogel, formerly of the Smithsonian Institution, who possesses an extensive knowledge of American industrial history, particularly as it relates to iron. All three authorities know of no other cast iron sculpture that approaches Vulcan in size--to the best of their knowledge, Vulcan is the largest cast iron sculpture in the world. The national survey work performed to date by the Save Outdoor Sculpture program of the National Museum of Art, and the Inventory of American Sculpture, compiled by the same museum, lists no sculpture, cast iron or otherwise, of Vulcan's height in the U.S., except of course the Statue of Liberty. The "S.O.S." survey is incomplete, although it is unlikely that any sculpture of the dimensions and medium in question has escaped attention. Vulcan, however, is not yet on their list. An exhaustive, or even comprehensive cataloging of U.S. or world colossi, particularly those made of iron, or with industrial connotations, or that overlook cities from landscaped parks is obviously beyond the scope of this report. Therefore, the author has chosen to qualify Vulcan's claim to the superlative in question--Vulcan is reputedly the largest cast iron sculpture in the world. It is possible that there is, or was at one time, a comparable or even larger cast iron sculpture of some kind, but the existence of any such work did not come to light during the research for this report.

significant feat of the iron founder's art. The "Iron Man" was seen by nineteen million people at the St. Louis Exposition, and the statue and its creator, Italian sculptor Giuseppi Moretti, received prizes from the Fair Commission.

Although Vulcan occupied a brief position as Birmingham's spokesman to the world, he has experienced cycles of attention and neglect since the St. Louis Exposition (commonly referred to as the St. Louis World's Fair). Birmingham had no firm plans for Vulcan's post-Exposition disposition, and after he spent more than a year lying disassembled in the weeds, he was incorrectly reassembled at the State Fairgrounds, where he served as an advertising prop and popular meeting place. Civic forces intent on reviving Vulcan as an attraction and symbol for Birmingham relocated him to Red Mountain in the 1930s. Here the image and appearance of the statue was further altered by the addition of a beacon, and alterations to the park and tower, originally a Works Progress Administration project.

Vulcan has endured a long career as a symbol for Birmingham, despite changes of location and popular perception. Vulcan is a significant technical achievement, in terms of the speed and skill with which he was created, his sheer size, and the use of cast iron as a medium. Artistically, Vulcan is significant as an unusual, heroic American colossus, created to symbolize the industrial character of Birmingham through mythical association, great size, powerful appearance, and use of native materials.

HISTORICAL BACKGROUND

The City of Birmingham, Alabama, owes its existence primarily to the fortuitous proximity of valuable mineral resources. Underlain by thick seams of coal, and dominated by Red Mountain with its deposits of iron ore, Birmingham was ideally suited to the establishment of iron manufactories. A sign on the old Birmingham Chamber of Commerce Building once proclaimed: "Everything to Make Steel--Iron Ore, Coal, and Limestone--Are All Within Gunshot of This Building".² This often quoted statement aptly summarizes the economic history and rationale of what is referred to as the Birmingham Industrial District, which the statue of Vulcan was created to promote and symbolize.

Birmingham evolved from land speculations of the Elyton Land Company, and struggles between speculators for the strategic

²Marjorie Longenecker White, The Birmingham District: An Industrial History and Guide (Birmingham: Birmingham Historical Society, 1981), 39.

location of railroad lines. When incorporated on December 19, 1871, Birmingham had a population of 1200.³ The presence of iron ores in the region was well-known, as iron smelting furnaces which supplied the Confederacy during the Civil War, such as those now standing at Tannehill, still dotted the countryside. The region also contained abundant supplies of magnesian dolomite limestone for blast-furnace flux, and timber for charcoal to fuel the iron furnaces. Charcoal was expensive to make, and as a result was being replaced elsewhere in the United States by anthracite or coked bituminous coal as a blast-furnace fuel. The presence of coal in the Birmingham District was also known, but it was only mined on a small scale for domestic use. Birmingham's early industrialists realized that in order for the region to rise to prominence as a manufacturer of iron, a product which matched the quality of Northern competitors had to be manufactured in volume, using coke as a fuel source. On February 26, 1876, the Experimental Coke and Iron Company successfully tapped the first Alabama coke-smelted pig iron at the Oxmoor furnace, just to the south of Red Mountain.⁴ The success of the "Oxmoor experiment" led to the exploitation of the Pratt coal seam, a coking coal deposit located at the northwest edge of the city. Mining operations in the Pratt seam spawned the operation of beehive coke oven batteries, and in 1880, the first coke-fired iron furnaces in Birmingham were opened by the Alice Furnace Company. Several other iron furnace facilities were constructed during the 1880s, including the Woodward and Sloss plants. Birmingham emerged as the core city of an industrial district that stretched along the iron ore seams of Red Mountain, spanning from the Warrior coal field in the west, southeast to the Cahaba field.

By 1890 the Birmingham District boasted twenty-five blast furnaces, and had risen from the twentieth largest U.S. producer of raw iron in 1870 to the fourth largest.⁵ This rapid industrial growth was accompanied by phenomenal population growth--in 1880, Birmingham had 3,086 residents; by 1890, the population figure had risen to 26,178.⁶ The absorption of mining and smelting suburbs through the Greater Birmingham Act in 1910

³Martha Carolyn Mitchell Bigelow, Birmingham: Biography of a City of the New South (Birmingham:), 19.

⁴Leah Rawls Atkins, The Valley and the Hills--An Illustrated History of Birmingham and Jefferson County (Woodland Hills, California: Windsor Publishing Company, 1981).

⁵Bigelow, 38.

⁶Ibid, 31.

greatly expanded the physical size and population of the City. Birmingham's population rose from 38,415 in 1900, to 132,685 in 1910.⁷ By 1904, when Vulcan was created, Birmingham's iron and steel businesses, railroads, utilities, and banks were consolidating into more powerful concerns. During the first decade of the Twentieth Century, Birmingham had become the most powerful industrial community of the South, and held sway over the economic activities of the State of Alabama.

By the turn of the century, Birmingham's prominence as a great industrial city gave it the name "The Pittsburgh of the South". Although Birmingham also goes by the moniker "The Steel City", and steel is still made there, Birmingham was primarily a manufacturer of merchant pig iron. Birmingham iron ores are high in phosphorous and silica, making them excellent for the production of pig iron. The chemistry of local ores necessitated highly energy-intensive processes for the manufacture of steel, however, which is essentially iron with an artificially manipulated carbon content. The first economically successful manufacture of steel in the District was accomplished at Ensley on November 30, 1899 by the Tennessee Coal and Iron Company, which was later absorbed by United States Steel, now USX. This company currently operates the vast, state-of-the-art Fairfield pipe and sheet steel mill just west of the city.⁸

Iron ore is no longer mined in Birmingham; steel is made from imported ores. Large-scale production of pig iron made Birmingham an ideal location for cast iron foundries, such as Hardie-Tynes Manufacturing Company and Stockham Valve and Fitting, both still in operation. The city became a prime location for manufacturers of heavy castings, including the world's largest manufacturer of cotton gins.⁹ The metallurgical qualities of Birmingham's pig iron made it especially suitable for the manufacture of cast-iron pipe, and the city became the largest manufacturer of cast-iron pipe in the U.S.¹⁰ With American Cast Iron Pipe Company (ACIPCO), McWane Cast Iron Pipe, and U.S. Pipe and Foundry all still operating, cast-iron pipe remains the bastion of the District's iron-related industry.

⁷Malcom McMillan, Yesterday's Birmingham (Miami, Florida: Seeman Publishing Company, 1975), 78.

⁸Ethel Armes, The Story of Iron and Coal in Alabama (Leeds, Alabama: 1987), 466.

⁹Bigelow, 46.

¹⁰White, 54.

EARLY BIRMINGHAM AND VULCAN

Birmingham's prominence in the manufacture of iron and related products has always been a source of great civic pride. This pride has long been associated with, and symbolized by, the Vulcan statue and the name of Vulcan. Vulcan appeared as an image associated with area metallurgy as early as 1885, when he was depicted in an engraving in an advertisement for George C. Kelley's hardware concern, a seller of "Mining, Furnace, Railroad and Mill Supplies and Agricultural Implements," which appeared in a promotional volume, The Mineral Wealth of Alabama--And Birmingham Illustrated.¹¹ The bearded Vulcan is depicted clad in skins, naked to the waist. He is not depicted at his forge, but is shown breaking up a rock ledge with a long-handled sledge hammer, with a smoking volcano in the background. It is unlikely that this one image had any direct impact on future Birmingham promotional imagery, but it serves as an early example of the use of the image of Vulcan in association with area industry. This association is meaningful today; thirty-nine Birmingham-area businesses still use the Vulcan name.¹²

By the 1890s, Birmingham hosted an increasingly ethnically diverse and commercially-oriented population, many groups of which emerged with various agendas. On February 27, 1891, a group of eleven Birmingham businessmen incorporated the Birmingham Commercial Club, "a social and literary society...[for the] social and literary improvement of its members...." This society offered no shares, and was "...not formed for pecuniary

¹¹Raymond J. Rowell, Sr. Vulcan in Birmingham (Birmingham: Birmingham Centennial Committee, 1972), 6.

Rowell's book is by far the most exhaustive treatment of Vulcan's history. The author was a journalist and reporter for the Birmingham Age-Herald, who satisfied his interest for area history through years of research in the archives of the Birmingham Public Library archives, often on his lunch hour, according to Linn-Henley Research Library Archivist Marvin Whiting. Rowell made use of newspaper accounts almost exclusively, however, he did not footnote, and only occasionally mentioned the dates and sources of his references. This history of Vulcan relies strongly on Rowell's work, and Birmingham newspapers, particularly for the events of 1904-1906, and does not attempt to equal Rowell's coverage of specific details.

¹²South Central Bell Telephone Company, Business White Pages (1993), 201-202.

purposes."¹³ Two years later, on July 10, 1893, the Club reincorporated under the same name, but with markedly different articles. The Club offered 1,000 shares at \$1.00 each, and stated that "the general purpose of the Club shall be to encourage social intercourse and good feeling among businessmen; to foster an...honest, active and enterprising commerce; to watch over and protect and advance the business interests and general welfare of Birmingham and Jefferson County...[and] to agree upon commercial forums and regulations..."¹⁴ The power and resources of the Commercial Club, and their dedication to the industrial success of Birmingham is evidenced by their \$40,000 capital contribution toward the first technically successful manufacture of steel in Birmingham.¹⁵ This club would later task themselves with the development and financial backing of the Vulcan statue.

Another newly-formed civic organization was the Turin Verein Society, a social club for those of Germanic descent. According to the Society's articles of incorporation, dated November 8, 1887, the object of the Society was "...to strengthen and improve the body in general and shall regular schools be started to this purpose."¹⁶ Despite the apparently high-minded ideals of the Turin Verein Society, they are better known for initiating the celebration of Mardi Gras in Birmingham. In 1895, the Turin Verein realized the economic potential for holding a Mardi Gras celebration in the City, and approached the newly-reincorporated Commercial Club regarding the matter. Birmingham held the first of five annual Mardi Gras celebrations on February 18, 1896. These Mardi Gras celebrations were, according to tradition, presided over by a mythical king and queen, who were from a distant, exotic place. The king and queen were played by local luminaries, who by festival decree were only allowed to reveal their true identity at the closing grand ball. The image chosen for the first Birmingham Mardi Gras king was a mythical hybrid monarch titled "Rex Vulcan I" who hailed from the far-off "Cape of Good Hope", but also bore the name of Vulcan.¹⁷ Four more Mardi Gras celebrations were held in Birmingham, and four "Rex Vulcans" presided over them. Unusually bitter winters plagued the festivals, which led to their discontinuance after 1900. From the Mardi Gras festivals, however, a consistent mythical image with

¹³City of Birmingham, Records of Incorporation, Vol.E, 311.

¹⁴Ibid; Vol.G, 53.

¹⁵Bigelow, 40.

¹⁶Records of Incorporation, Vol.B, 348.

¹⁷Rowell, 10.

metallurgical connotations emerged as a symbol associated with the city of Birmingham. This symbol was developed by, and had the approval of, two notable civic organizations, most significantly, the Birmingham Commercial Club.

VULCAN IN MYTHOLOGY

The image of Vulcan is an appropriate and logical image for the city of Birmingham, for it combines a dynamic heroism with the tradition of metalworking. Vulcan, the Roman counterpart to the Greek god Hephaestus, was portrayed as the god of fire in classical mythology, and emerged as the patron figure of the forge. According to myth, Vulcan was the son of Jupiter and Juno. Vulcan was described as having a deformity, usually referred to as lameness. There are varying accounts as to the origin of his deformity. Vulcan was either born deformed, and thrown from heaven in dissatisfaction by his mother, or was expelled as a result of his intervention in an argument between his parents, with his injuries resulting from his fall. Once on earth, Vulcan resided underground, and became the blacksmith to the gods, assisted by the one-eyed Cyclops, with his workshop deep within smoky Mount Etna. Vulcan was taught to make Jupiter's thunderbolts by Minerva, and his metallurgical accomplishments include forging the house of the gods from brass, the building of Apollo's chariot, the making of Aegis, the shield of Jupiter, and the armor of Achilles and Aeneas. Vulcan's creations, made from precious stones and a variety of metals, were noted for beauty and craftsmanship. Achilles' shield, for instance was formed of five metal plates, two of brass, two of tin, and one of gold.¹⁸ The ability to bond these metals together was a challenge of the blacksmith's art, and mention of this process implies that the Greeks had knowledge of advanced weapon forging techniques--such as layering of metals--first developed in Asia Minor. As a result of Vulcan's association with fire and the manufacture of various precious metal objects, he became associated not only with the forge, but with other creative arts such as architecture, armory, blacksmithing, and carriagemaking.

THE VULCAN STATUE

In May of 1903, the Louisiana Purchase Centennial Exposition Commission invited the State of Alabama to participate in an Exposition, to be held in St. Louis, Missouri, from April 30 to

¹⁸Brian Holme, Bulfinch's Mythology: The Greek and Roman Fables Illustrated (New York: Viking Press, 1979), passim.

Dec 1, 1904.¹⁹ The Exposition was a celebration of the centennial of the Louisiana Purchase, through which Thomas Jefferson purchased the Louisiana Territory from France, thereby doubling the territory of the United States.

Expositions and World's Fairs were internationally popular at the turn of the century, the 1893 Chicago World's Columbian Exposition being a notable example. Featured countries or states were usually invited by the event coordinators who negotiated exhibit content and space with the participants. Fairs and expositions featured popular attractions and wonders from around the world and across the United States. They also served as commercial and economic promotional vehicles for the host city and state, and for the participants. Although the fairs and expositions were ostensibly held to celebrate historical events, they served an important role in increasing awareness, commerce, and trade. The state exhibits often prominently featured the animal, mineral and vegetable commodities of the participating states. Exposition architecture and exhibits were often lavish in appearance, but of cheap, temporary construction. Fair construction was usually compartmental, with individual structures for each state, such as "the Ohio Building", or devoted to themes, such as "the Palace of Agriculture".

The State of Alabama participated in the 1893 World's Columbian Exposition in Chicago just a decade prior to the St. Louis Exposition. They spent \$38,000 on their exhibit which featured a giant topographical relief map of the state, highlighting mineral resources. For reasons which remain unclear, however, "the Legislature, and the State Administration deliberately refrained from making any provision for Alabama's participation in the World's Fair at St. Louis".²⁰

¹⁹Rowell, 12.

²⁰James Arthur MacKnight, The Executive Commissioners of the Louisiana Purchase Exposition St Louis, Missouri 1904. (St. Louis: Executive Commissionere Association, 1904), 147.

Universal Exposition Press, St. Louis, 1904. James MacKnight was chosen by the Commercial Club to lead the Vulcan project, as it was allegedly his invention. MacKnight also served as the Club's liaison with Exposition authorities, a position which he was well qualified for, as he had been the Administrator of the Alabama State Fair since 1898. MacKnight travelled to St. Louis to make arrangements and to secure a place for Vulcan. Apparently the Exposition authorities tapped some of MacKnight's energy

Another primary source which highlights the relevant events from this period is a letter to the Editor of The Birmingham News, written by Fred M. Jackson, Birmingham Commercial Club President, in response to apparent inaccuracies that were appearing in the newspaper at the time of Vulcan's move to Red Mountain in 1935.²¹ The second paragraph of the article briefly outlines the organizational history, and appears here quoted in entirety:

At the time of the St. Louis Exposition, in 1904, I happened to be president of the Commercial Club, now the Chamber of Commerce. Efforts were being made by leaders throughout our state to have the state government make an exhibit at the exposition. These efforts failed completely. Col. Rufus N. Rhodes, editor of the Birmingham News; Robert Jemison, Culpepper Exum, B.F. Roden, and several others at my request came to my office and discussed the feasibility of an exhibit being made by the city of Birmingham and Jefferson County. Many plans were suggested. James A. MacKnight, a well-known newspaperman, who was living near Calera, came to me with a proposition of building an iron man and placing him as the center of the exhibit. A discussion with the directors was had and Mr. MacKnight was employed to locate a sculptor, or someone capable of designing a figure symbolic of the mineral resources of the district, iron predominating. Mr. MacKnight met G. Moretti, an Italian sculptor who had only been in the country a short time. The result of this interview was the selection of the god of iron, Vulcan, as the subject of the figure. A plaster cast was made of the figure, brought to Birmingham, and molded by the McWane Iron Company. The figure was designed entirely on the basis of Mr. Moretti's conception of Vulcan.

and skills as a journalist, as he authored Exposition documents such as the Executive Commissioners biographies. The newspaper articles sent to Birmingham from St. Louis while MacKnight was there are all similar in their laudatory tone, and are likely the work of MacKnight. It is difficult to identify the true source of undocumented early Vulcan promotional material; likely most of it comes from the key players in the commercial club itself: MacKnight, Fred Jackson, and the source of J.H. Adams' recurring poetry.

²¹F.M. Jackson, "Vulcan", in "Voice of the People", 8-19-35, Birmingham News, n.p.

letter to the editor represents the only primary document written by anyone directly involved with the Vulcan project that was not written with strictly promotional intent that was found in the course of research.

Little progress was made in securing state funding for an Alabama exhibit during the summer of 1903, and the September session of the legislature proved fruitless as well. Early ideas for the Alabama display included geological relief maps of the state and the Birmingham District. As late as November 4, 1903, after Birmingham's liaison with the Exposition authorities in St. Louis had already begun, James MacKnight appealed to Charles P. Lane, president of the Commercial and Industrial Association of Alabama to help rally the commercial forces toward the creation of a state exhibit at St. Louis. Much enthusiasm, but little financial support was garnered from the Association, and other emerging Commercial Clubs in Alabama cities such as Huntsville and Decatur.²²

By October of 1903, the Birmingham Commercial Club realized that it would have to take matters into its own hands. At a meeting on October 13, 1903 members appointed an executive committee consisting of president Fred Jackson, Rufus N. Rhodes, Culpepper Exum, Col. T.G. Bush, and George H. Clark and James A. MacKnight to advance the work on the exhibit. James Arthur MacKnight was Born in Salt Lake City in 1855. He was educated in law in London and Paris, but pursued a career in Journalism, working for U.S. newspapers including the New York Tribune. He also briefly served as U.S. Consul to St. Helena.²³ He was selected for involvement in the St. Louis Exposition not only for his "iron man" concept, but for his connections with Exposition authorities. MacKnight had previously worked with Exposition Director J.V. Skiff as a writer; Skiff's chief assistant Hoch was a former colleague at the New York Herald, and MacKnight had worked with Exposition Secretary Stevens as an editor at the St. Louis Times.²⁴ These associations led to opportunities for MacKnight to write Vulcan releases for the Birmingham press, as well as other Exposition Publications.

At the October 13, 1903 meeting, the Commercial Club voted to adopt an Exposition exhibit concept which MacKnight had first suggested to Club member J.V. Gibson in May of 1903. MacKnight's

²²The details of the organizational history surrounding the conception and funding of the Vulcan project are covered in exhaustive detail in the Birmingham Age Herald and News, and cannot be elaborated on here at great length.

²³James MacKnight The Executive Commissioners of the Louisiana Purchase Exposition, St. Louis, Mo. 1904 (St. Louis: Universal Exposition Publishing Company, 1905).

²⁴"How the Vulcan Idea Started and Developed," Birmingham Age Herald, 28 February 1904, n.p.

original idea was for a colossal human figure, from 45' to 60' tall, composed of iron, steel, coal, and limestone, all from the Birmingham District. This concept was originally rejected as "impractical and visionary."²⁵ At the meeting, the Vulcan idea had advanced considerably. The committee "decided on the plan to build a colossal statue of Vulcan entirely out of Alabama iron, as the central object of the exhibit. All the raw materials and Manufactured products of the Birmingham District will be artistically arranged and shown to the best possible advantage."²⁶ This is how the Birmingham District exhibit ultimately was composed when installed in the Palace of Mines and Metallurgy.

It is not clear exactly when the name Vulcan became associated with the Birmingham St. Louis Exposition figure. The Jackson letter of 1935 implies that Moretti had a strong say in the selection of Vulcan as the proper symbolic vehicle. The Vulcan name, however, appears in the Birmingham Age Herald on October 14, the day after the forming of the special Exposition Committee, and more importantly, several weeks before James MacKnight met with Moretti to discuss the statue commission. James MacKnight is often credited with the Vulcan idea, but should perhaps only be considered responsible for the "iron man" concept. MacKnight, in an interview in early 1904, stated "I first figured on building a rough figure out of steel billets, pig iron, fragments of coal, iron ore, and lime rock. But the idea caught fire, and somebody suggested an iron Vulcan."²⁷

Once the decision had been made, practical efforts began toward the creation of the exhibit. MacKnight served as liaison between the Commercial Club and Exposition authorities, traveling to St. Louis several times to confirm the feasibility of the Vulcan display and to secure a desirable space within the Palace of Mines and Metallurgy. On the 27th of October, Tennessee Coal and Iron Company, and Sloss-Sheffield Steel and Iron Company agreed to include their displays with the Birmingham District exhibit, adding considerably to the scope of the displays.

The purpose of the Vulcan statue and the larger Birmingham district exhibit was multifold. Vulcan was certainly an attention getter, a display of pride, foundry skill and technical bravado. The exhibit, however, was also symbolic of Birmingham's

²⁵"Ibid", n.p.

²⁶"Colossal Vulcan Will Be Made for St. Louis," Birmingham Age-Herald, 14 October 1903.

²⁷Rowell, 22.

particular industries; it was a vehicle to advertise the products of the District and, by extension, the metallurgical and geological potential of an emerging industrial South. It was also a way to attract an influx of industries and workers to the region, swelling the economy and the population to realize the potential for growth that the District had to offer. Quotes from the earliest days of the exhibit's conception certainly address these issues, making the hopes and intent plain: "The colossus of Birmingham iron will be a fine work of art and will be a credit to Birmingham for all time to come. Vulcan represents the genius of the liberal arts, and is especially the patron of the workers in metals. The figure is therefore, extremely appropriate."²⁸ A Birmingham News editorial stated that: "The Iron Man will indeed stand for Birmingham, the massiveness and solidarity of our statue typifying the great industrial city of the South, a city destined, in time, to be the foremost in the United States in all that pertains to iron and steel making."²⁹ And finally, prominent merchant M.V. Joseph summarized by saying: "We cannot live by ourselves, we must bring in new people to upbuild our Birmingham district, and I believe this 'giant man' will be a powerful advertisement toward this end."³⁰

James MacKnight's major task in early November 1903 was to find a sculptor both qualified and willing to take on the Vulcan commission. It is not clear exactly where MacKnight travelled in search of a suitable sculptor, but New York City is mentioned. Aside from Moretti, the only named potential sculptor was Cyrus Dallin of Boston, Massachusetts. Dallin was apparently interested, but when he was told of the time constraints involved--five months from drawings to delivery--he replied that anyone who thought such a project could be done in less than two years was "off the rails".³¹

The existing sources do not reveal exactly how MacKnight arrived at the choice of Giuseppe Moretti. Given the circumstances, however, Moretti appears to be a logical choice if not an obvious one, for several reasons. MacKnight was investigating the art centers of the eastern U.S., and was likely encountering many art world promoters and figures along the way. Moretti had

²⁸"Big Corporations to Make Exhibits," Birmingham Age-Herald, 28 October 1903.

²⁹Birmingham News, Editorial, 20 November 1903.

³⁰M.V. Joseph, at meeting of Birmingham Commercial Club, as quoted in Rowell, 3 November 1903, 13.

³¹Rowell, 14.

established relationships with art foundries, he was well-known in Pittsburgh, and he had done reasonably prestigious work, such as the Hunt/Vanderbilt commissions. Moretti was, like Bartholdi (the sculptor of the Statue of Liberty), a known, ambitious, mid-career artist who occupied a second tier below American sculptors such as Augustus Saint-Gaudens and Daniel Chester French, in terms of quality of work and ultimate notoriety. Moretti's name could have been among dozens that came up during MacKnight's search. Moretti was well-suited to the job due to his background and classical education, and his familiarity with the genre of mythological sculpture. Moretti was also comfortable and competent with the execution of large-scale works of sculpture.³² In any event, E.C. Lewis's praise of MacKnight's choice of Moretti sums up what the Commercial Club was looking for in a sculptor: "You are to be congratulated on the choice of your artist, G. Moretti. No man living can excell Moretti in a grand conception of a grand idea, to be portrayed in metal or marble. Every instinct of the man is artistic...He will grasp what the statue of Vulcan must be to represent Alabama."³³ And ultimately, the most important factor favoring Moretti's selection as the sculptor of the Vulcan statue was that MacKnight was desperate to find someone, and Moretti accepted the challenge.

On or just prior to November 23, 1903, James MacKnight signed a contract for the sculpting of the Vulcan statue with Italian sculptor Giuseppi Moretti in New York, where the sculptor kept his residence and studio (figure 1). According to one account, an 8' clay model was made before the signing of the contract, indicating Moretti's enthusiasm for, and prior knowledge of, the project and the Vulcan concept (figure 2). It is not clear whether the model was the result of a series of prior consultations during which MacKnight and Moretti worked out the iconographic program and physical appearance of the statue, or if it was entirely Moretti's conception, as the Fred Jackson editorial suggests. In any event, MacKnight was suitably impressed, and hired Moretti. The clay model was displayed at the

³²Another possible link between MacKnight and Moretti may be Moretti's role as one of several providers of sculpture for the 1897 Tennessee Centennial. MacKnight took over the administration of the Alabama State Fair in 1898, and could possibly have been a professional associate of Mr. E.C. Lewis, Director-General of the Tennessee Centennial. Considering MacKnight's administrative associations with the St. Louis Exposition authorities, there may be some connection.

³³"Vulcan Idea Gets Big Endorsement," Birmingham Age-Herald, 28 January 1904.

Commercial Club, and later used in scaling up the full-sized work. Several sources note a series of "arguments" which took place within the Commercial Club after Moretti was hired, in which the ultimate appearance of Vulcan was debated.³⁴ Apparently some faction must not have liked Moretti's model, and advocated a "handsome Hermes", while others supported the "ugly Vulcan" as depicted by the model. Obviously, those who supported the choice of Vulcan as conceived by Moretti, and accepted by MacKnight, won out.

Giuseppi Moretti was born in Sienna, Italy, on February 3, 1857. He commenced his artistic education in the sculpture studio of Tito Serrochi at the age of nine. When Moretti was fifteen, he was apprenticed to the Florentine sculptor Giovanni Dupre. Moretti continued to learn the art of sculpture in the marble quarrying area of Carrara, and assisted the sculptor Rendici in the Croatian city of Agram. Moretti worked in Vienna, and Budapest, where he sculpted a bust of Emperor Franz Josef. In Transylvania, Moretti pursued an interest that was to become an obsession once ensconced in Alabama: to capitalize on various sources of sculptural marble.

In 1888, Moretti left Europe for New York where he initially encountered unexpected financial difficulties. Through a twist of fate, Moretti was employed by Architect Richard Morris Hunt to make sculpture for two mansions, including a Vanderbilt Mansion in Newport, Rhode Island. Thus, Moretti survived by executing minor decorative and ecclesiastical commissions, and established connections with the Mott Iron Works--a major architectural and decorative iron foundry--and the Henry-Bonnard Bronze Company. Finally, Moretti started his own foundry, the Roman Bronze Company, the first art foundry in the U. S. to employ the lost wax process in bronze art casting.³⁵ Moretti obtained the commission for his first important American statue, a likeness of Pittsburgh's Edward M. Bigelow, the man responsible for the creation of several parks in the city. Moretti moved to Pittsburgh in 1892, and sculpted a statue of composer Stephen Foster, and also executed a quartet of large panthers for the Panther Hollow bridge. Other monumental Pittsburgh works followed, including the two Highland Park entrance gates at

³⁴The earliest, and possibly root source of the "arguments" is found in an undated, anonymous biographical history of Moretti's involvement in the Vulcan commission, likely written by his assistant Geneva Mercer, in the Mercer papers at the Linn Henley Research Library, Birmingham. A similar statement is made in "Iron Man," Time magazine, 17 August 1936.

³⁵Geneva Mercer papers, Linn-Henley library.

Highland and Stanton Avenues.

Word of Moretti's abilities in large portrait statuary travelled, and he received commissions for statues in Rochester, New Hampshire; Akron, Ohio, and most significantly, a statue of Commodore Vanderbilt at Vanderbilt University in Nashville, Tennessee. After a decade of patronage in Pittsburgh, Moretti's political connections fell from power, and he returned to New York.

At was at this phase in Moretti's career that James MacKnight approached him regarding the Vulcan Commission. Moretti signed the Commercial Club contract, and commenced the construction of the model and the patterns in New York. Moretti moved to Alabama to oversee the casting. To aid him, Moretti took on Birmingham resident and sculpture student Geneva Mercer as his life-long assistant. Moretti's travels in the Birmingham area took him to the dolomite quarries of the Talladega-Sylacauga "marble belt", where extremely high-quality marble, suitable for sculpture as well as architectural veneer, was being destroyed in the process of blasting for blast-furnace flux. While working on the Vulcan statue, Moretti created what he considered his masterpiece, the Head of Christ from a block of Sylacauga marble (figure 3). The sculpture was displayed with Vulcan at St. Louis to demonstrate the quality of Alabama's marble. Moretti attempted to champion Alabama marble as a sculptural stone, but his quarrying ventures were dogged by bad financial luck. Several Moretti marbles grace Birmingham; unfortunately the Head of Christ is located at the State Archives in Montgomery, rather than in Birmingham, as Moretti wished.

Many of Moretti's other works, such as the forty-five foot tall Battle of Nashville monument, were also of considerable scale. Not only did Moretti create the World's largest iron man, as a pioneer in aluminum art foundry techniques, he created the world's first aluminum art sculpture. Moretti was commissioned by the Mellons of Pittsburgh and ALCOA to make an aluminum sculpture of Charles M. Hall, inventor of the first commercially practical method of refining the metal. ALCOA's research department developed the metal for the casting, and the statue was given to Oberlin College in Oberlin, Ohio, Hall's alma mater.³⁶

In 1928, after executing over 150 American commissions, Moretti retired to his idyllic studio setting, the Villa Bellosguardo, on the Italian Riviera at San Remo. In so doing, Moretti left behind the results of a prolific career in the sculpting of public monuments throughout the eastern and southern United States.

³⁶Pittsburgh Chronicle-Telegram, 7 September 1922.

Moretti worked in Italy until his death on January 17, 1935.³⁷

For Moretti, or any sculptor engaged in the creation of monumental sculpture at the turn of the century, the Vulcan commission was likely a tantalizing one. Although for some, at least for Cyrus Dallin, interest was lost due to the temporal constraints of the project, Moretti ultimately proved it possible, albeit at the expense of some fine control over the appearance of the finished product. Vulcan was conceived at the tail end of a period when colossi were popular, particularly in Europe. With the Nineteenth-Century neoclassical revival, both large-scale sculpture, and allegorical, mythical, symbolic themes dominated academic art and architecture. Numerous colossi were erected in Europe, the largest example of which, the Statue of Liberty, was given to the United States. Moretti, practicing in 1903, with his experience sculpting in several European countries, was the product of a time and place in which the opportunity to sculpt a colossus was the opportunity of a lifetime. Vulcan was a unique opportunity, one that could possibly thrust Moretti into greatness. This may also explain why Moretti accepted the commission to sculpt Vulcan from MacKnight.

THE CASTING OF VULCAN

Once the contract between Giuseppe Moretti and the Birmingham Commercial Club was signed, the sculptor retired to his studio at 152 West 38th Street, New York City, to begin. The first step in the creation of the full-size Vulcan was the 8' model, constructed from clay applied to a wooden armature. This model was primarily for the use of the pattern makers, but it also served a publicity role, as the first published photographic images of Moretti's Vulcan were of the model. The completed model was also briefly displayed at the Commercial Club offices in Birmingham.³⁸

The next step in the process was the construction of the full-

³⁷Biographical material on Giuseppe Moretti was found in the Geneva Mercer Collection and Giuseppe Moretti scrapbooks at Special Collections and Archives, Livingston University, Livingston, Alabama, and the Giuseppe Moretti and Geneva Mercer papers at the Archives and Manuscripts Division, Linn-Henley Research Library, Birmingham Public Library. Papers at the Birmingham repository were more thorough. Biographies consulted were undated, unpaginated typewritten manuscripts, either by Geneva Mercer, or no author given.

³⁸Birmingham Age-Herald, 27 November 1903.

sized pattern and molds. Most of the literature on the casting of Vulcan uses these two specific foundry terms somewhat indiscriminately, resulting in confusion. For clarity, a pattern is a positive, or copy of the object to be cast in metal, and a mold is a negative, hollow impression, made from the pattern, in which the molten metal is poured to make a positive casting.

Giuseppe Moretti had difficulty locating a suitable space for the erection and handling of the patterns, and finally began the work in the uncompleted nave of St. Stephen's Church in Passaic, New Jersey. Moretti used skilled Italian patternmakers for the project, likely the reason for selecting a New York-area location rather than a Birmingham one.³⁹ The practice of making the pattern at a location close to the artist's studio, often at a great distance from the actual foundry work, was not uncommon. It was more convenient for an artist to work with established resources close to home, and Moretti's established relationships with New York-area foundries has already been mentioned. The casting of the object close to its ultimate location made sense, for it was far cheaper to ship relatively light plaster patterns than completed metal castings. Vulcan had to be cast in Birmingham; it was a critical part of the statue's symbolism.

Moretti's craftsmen scaled up the model of Vulcan to the full-sized pattern by a combination of enlargement from mathematical measurements and templates, and sculpting by hand and eye. One view of the pattern-making process shows the workers posed around the head and shoulders of the statue, with one worker perched on the shoulder with a slightly larger-than-life bust model of Vulcan, which was consulted by the pattern makers in scaling up the model (figure 4). Due to the massive size of the sculpture, the patterns had to be made in several sections. The pattern armature from feet to hips was constructed as one piece (figure 5). An armature was constructed of heavy timber, and the approximate surface shape of the figure was built over the armature using lathing. The lathing was covered with a layer of clay, and the final sculpting, carving, and refinement of the surface was made in a layer of plaster. When the plaster patterns were dry, they were sawn into sections that corresponded to those later cast in iron.

The next step was the creation of negative molds from the positive patterns, that is, a set of molds with an impression on their inside surface of the outside of the eventual object to be cast. The positive plaster pattern was coated with a thin layer of water-resistant material to aid parting, and a thick layer of

³⁹Thomas B. Leonard, "Vulcan Statue," letter in Linn-Henley Vulcan clippings file, Southern Room.

plaster was laid over the outside of the pattern. When the plaster dried, it was removed in carefully-cut sections, and reassembled to create a matrix. The matrix, a hollow negative mold of the section to be cast, was made by binding the negative mold sections together to form an empty shell. A carefully-made solid core was then built up inside the empty matrix. The empty space between the negative matrix and the core roughly followed the intended section thickness of the eventual casting, in this case from roughly three and one quarter inches to three quarters of an inch. Once the matrix and the core were made ready by coating the inside surfaces with parting material, plaster was poured into the gap between the matrix and the core and allowed to dry. The matrix and core were then separated from the final pattern, which emerged a fully-dimensioned plaster positive version of the sections to be cast in iron for Vulcan. These fragile plaster pattern sections were carefully packed for shipment to Birmingham. Conditions in the empty church were not ideal for making the plaster patterns; the plaster froze before drying in the open church, and the buttocks, head, and apron cracked as a result, requiring repair by Moretti.⁴⁰

The first section of the Vulcan patterns, the section from the waist to the knees, arrived in Birmingham on Thursday, February 12, 1904. Here it sat, strapped to a flatcar awaiting the signing of the casting contract. Originally, the casting was to have been performed by the "Dimmick pipe plant", one of four original bidders for the Vulcan job.⁴¹ This plant is possibly the American Casting Company, incorporated on October 26, 1903 by Daniel and Harry Dimmick.⁴² The Dimmicks, however, were no longer associated with the Vulcan casting by the time the first parts arrived. The contract for the casting of Vulcan's anvil, hammers, and anvil stand went to the Williamson Iron Company. These large, heavy castings did not require the special skills or facilities required to cast Vulcan, and may have been subcontracted out by the firm that was awarded the contract for casting Vulcan, The Birmingham Steel and Iron Company. This foundry was located across the street from the Williamson firm, on the site of the former Linn Iron Works, the first iron concern in Birmingham.

The Birmingham Steel and Iron Company (B.S. & I. Co.) filed for a Certificate of Incorporation from the City of Birmingham in the

⁴⁰George Clifton Thompson, "Vulcan: Birmingham Man of Iron," Alabama Heritage, Spring 1991, 7.

⁴¹Birmingham Age-Herald, 14 January 1904.

⁴²Birmingham Age-Herald, 27 October 1903.

fall of 1903, and the Certificate was approved on October 2nd. The company issued \$50,000 worth of stock divided into 500 shares. Mr. James Ransom McWane was listed as President, Treasurer, and Director, with seventy-five shares; W.T. Adams was listed as Vice-President and Director, with seventy-four shares, and T.W. Roberts was listed as Secretary and Director, with one share. The Company's declaration of intent was ambitious; it made legal provision for their intent to operate a foundry or foundries, manufacture steel, bar iron and other metals, to mine coal, rock and slate, make coke, own houses and commissaries for workers, and to make tools, and equipment for railways and tramways.⁴³

James Ransom McWane came from a family with a strong background in foundry work. His grandfather, James McWane had emigrated from Scotland to Virginia in 1805, and was involved with the development of the McCormick reaper. James McWane's third son, Charles Phillip, started a plow and foundry concern in Wytheville, Virginia in 1877, and in turn, Charles Phillip McWane's sons Henry, and James Ransom operated the Lynchburg Foundry Company in Lynchburg, Virginia. James Ransom McWane was President of Lynchburg Foundry 1898-1902. James Ransom had been educated as a preacher, but left the ministry to follow a career in business. In 1902, James Ransom McWane left Lynchburg for Birmingham, Alabama, at the encouragement of The Birmingham Commercial Club, to seek his fortune in the burgeoning iron industry there. In 1907 McWane became Vice President of the American Cast Iron Pipe Company, or ACIPCO; in 1914 he became its President.

In 1922, McWane started McWane Cast Iron Pipe, where he pioneered the manufacture of 16' pipe, and held more than seventy-five patents. McWane developed the Pacific States Cast Iron Pipe Company in Provo, Utah, and also served as its president. James Ransom McWane died on June 24, 1933, but his legacy continues; today McWane Incorporated continues to make cast-iron pipe in Birmingham, and also operates other foundries throughout the South and the nation.⁴⁴

⁴³Records of Incorporation, vol. N, p. 604.

⁴⁴Information on the history of the McWane foundry concerns is found in: anon., "James Ransom Mcwane," The Iron Worker, October 1934, 8-9; Marcus J. Elcan, Jr., "And now, a few words as to your future prospects," The Iron Worker Autumn, 1959, 20-24; Carolyn Satterfield, "J.R. McWane: Pipe and Progress," The Alabama Review vol.35, January 1982, No. 1, 30-37, and an interview with James Ransom McWane, July 13, 1993.

When James Ransom McWane came to Birmingham, he was offered a \$12,000 incentive by the Birmingham Commercial Club to help start his iron business, but he declined the offer. McWane was also encouraged to take over the property and equipment of the bankrupt Hood Machine and Foundry Company at 1421 1st Avenue North.⁴⁵ The Hood shop (later the site of Ward Baking) was located at the corner of the Fifteenth Street easement (across First Street from what is the now-closed downtown Sears, Roebuck and Company). Hood was what is called a jobbing foundry, a shop that made limited runs of castings for various customers, without a specific product or a dedicated market. On January 20, 1904, McWane and W.T. Adams purchased the Hood property for \$35,000, paying \$2,691.46 in cash, and agreeing to pay the balance of Hood's indebtedness, \$32,308.54, to the First National Bank of Birmingham. The deed included "...all stock on hand, tools, fixtures, material, patterns and supplies of every kind and character..."⁴⁶ On Friday, February 13, 1904, the contract for casting Vulcan was officially let to the Birmingham Steel and Iron Company. McWane's bid was "probably 25 or 50 percent lower than any other firm would have made the casting."⁴⁷ On February 24, 1904, McWane and Adams took out a \$30,000 mortgage on their property, with the first \$5,000 payment due in January of 1905.⁴⁸

On April 9, it was announced that the Birmingham Steel and Iron Company was planning major improvements in its physical plant, including a furnace for making steel. This was no small feat in Birmingham at the time, due to difficulties associated with the smelting of the regions high-phosphorus ores, and was therefore probably a basic open-hearth type furnace. According to the newspaper announcement, "the company accepted the contract to cast Vulcan, and for that reason has been delaying the work of reconstructing the place and building the new furnace."⁴⁹ McWane billed the Commercial Club \$10,070 for casting Vulcan. The Club consulted with an independent authority regarding the figure, and suggested to Mr. McWane that the price was exorbitant. McWane then offered to reduce the price to \$7,500, which included a rebate of \$170.41 for scrap salvage, and a reduction of \$2,400,

⁴⁵Rowell, 33.

⁴⁶Jefferson County Judge of Probate, Deed 352:87.

⁴⁷Birmingham Age-Herald, 13 February 1904.

⁴⁸Birmingham Probate Court, Mortgage Records, 348:564.

⁴⁹"Will Soon Build a Steel Furnace," Birmingham Age-Herald, 9 April 1904.

as Vulcan was a "public enterprise".⁵⁰ McWane's generosity made him the second largest financial contributor to Vulcan, but it could not have helped his own financial situation. The Birmingham Steel & Iron Company, like the Hood Machine and Foundry Company, lacked a distinctive product line, with a captive clientele, and this was McWane's greatest difficulty.⁵¹ Birmingham was an increasingly competitive place to make iron in 1904, and was still a questionable place to try to make steel. Offering a low bid on an unprecedented task, and then further reducing the price was likely the last straw for McWane's business, for the Birmingham Steel and Iron Company failed financially in 1905.⁵²

The patterns for the Vulcan castings were so large that a crew of men was put to work excavating a large pit in the floor of the B.S. & I. Co. foundry--hence the term "pit casting" for this type of work. Ordinarily, casting of smaller shapes was performed in a two-piece casting flask, or cope-and-drag assembly, but no such hardware existed for such a large, custom job. The pit served as the flask. Once the pit had been prepared, a negative foundry mold, with core, had to be made from the positive plaster pattern. The foundry molds were not made in one piece, but in multiple segments, or drawbacks. Some of the pieces of the Vulcan mold required as many as forty to fifty drawbacks each. The head required roughly 150. Numerous drawbacks are typically needed for patterns that involve folds, curls, and complex surfaces with cutbacks. The plaster pattern was placed on a platform, and the drawbacks were built up around the pattern from the ground up. The drawbacks were made by pressing a thin layer of "loam", a cohesive, pasty, black foundry molding sand against the outside of the plaster pattern, and backing the loam up with a layer of refractory brick. The loam conformed exactly to the contours of the pattern. Each drawback was bolted together as a unit, and the precise relationship of one drawback to another was indicated

⁵⁰"Vulcan Donated to Birmingham," Birmingham Age-Herald, 18 June 1904; "Price for Casting Vulcan Adjusted," Birmingham Age Herald, 8 October 1904.

⁵¹James Ransom McWane, interview by Matthew Kierstead, 13 July 1993, Birmingham, Alabama.

⁵²The financial woes of the Birmingham Steel and Iron company can be traced through the Probate records at the Jefferson County Court House, Birmingham. Particularly helpful in tracing events are deed books 212:277 & 372; 352:87-88, 383:95-97; 732:46-49; and mortgage book 348:564-569. The circumstances surrounding the failure of the company were discussed in an interview with Mr. James Ransom McWane on 13 July 1993, and the account as written accurately reflects events, according to Mr. McWane.

with a system of exterior markings. Once the entire pattern had been molded with drawbacks, the drawbacks were carefully removed and baked in an oven, which hardened the loam, bonded it to the brick, and removed any lingering moisture.

Once the drawbacks were baked and hardened, they were reassembled so that the core could be made. A layer of foundry sand the desired thickness of the casting was applied to the inside surface of the drawback mold. A loam and brick layer was then built up on the exposed inside surface of the layer of sand. When the building of the core was complete, the drawbacks were removed again, the sand was removed from the loam layer of the core, and the core was baked. Once the core was baked, it was placed on the platform, and the drawbacks were assembled around the core, leaving a narrow space of the desired width between the two sides of the mold where the molten iron was poured in. This procedure was essentially similar to that used to make the plaster patterns.

The platform and molds were lowered into the casting pit, and foundry sand was rammed in around the mold drawbacks to contain the pressure and weight of the molten iron inside the mold. Bracing was also provided to prevent the molds from moving inside the casting pit. Passages called gates and vents were made in the sand to insure the proper flow of the molten iron, and the safe release of hot vapors and gases. Pig iron was melted in a coke-fired cupola furnace, and transferred to large ladles for pouring into the molds. Vulcan was exclusively cast from Sloss No.2 Soft Pig Iron, manufactured by the Sloss Sheffield Steel and Iron Company, which operated its merchant pig iron furnaces in Birmingham.⁵³ Once the iron was set, and still hot, the core was pulled in order to prevent shrink breakage which could occur during cooling. When the casting was cool, the drawbacks were removed, the sand and loam were cleaned from the casting, gates and vents removed, rough spots, mold lines and flashing ground off, and a coat of dark grey paint applied to prevent rust.⁵⁴

⁵³"Vulcan, God of Fire and Metals," Pig Iron Rough Notes, 1937, 4.

⁵⁴The information on the making of the pattern and the mold was synthesized from several sources: C.W. Ammen, The Metalcaster's Bible, Blue Ridge Summit, Pa.: Tab Books, 1980; George Thompson, "Casting Vulcan," a sidebar in "Vulcan: Birmingham's Man of Iron," Alabama Heritage vol. 20, Spring 1991: 12-13.; "The Casting of the Colossus Vulcan," American Machinist, 6 July 1905, 17; John L. Busby, "Vulcan Celebration Attracts Thousands--Iron Man Was Made by Union Molders," Labor--The News-History Magazine, 15 May 1939; and "How Cast is Made," Birmingham

The preparation and handling of the patterns and molds, and the actual process of casting were supervised by Giuseppe Moretti and James MacWane. The plant superintendent was Charles L. Ledbetter, and foreman of the foundry was Barney Conlin. Conlin, "one of the great moulders of his time...called together a group of molders...as good as could be found in his country." The Vulcan casting crew consisted of Jack Soresby, Charles Zwald, Henry Stepp, Dave Williams, Charles Cason, Clarence Hancock, Charles Gustin, Ike Swanson, George Rush, Henry Veitch Sr., Nick D. Smith, and Fred Buetticker. Rush was selected especially for his ability as a core maker; Veitch's family foundry had previously made the heaviest casting in Birmingham. Smith was later International Secretary of the Iron Molder's and Foundry Worker's Union. Buetticker, who was in charge of the Vulcan casting, was later Superintendent of the foundry and machine shop at Hardie-Tynes.⁵⁵

The casting process used for the iron Vulcan statue was identical to that used for large bronze art castings. On March 10, the first cast of Vulcan, the section from the waist to mid-thigh, was made, consuming 13,000 pounds of iron. On March 15, the second casting, the chest section was made, consuming 12,000 pounds of iron.⁵⁶ On March 19, the third section of Vulcan, the upper legs, was cast, requiring 10,000 pounds of iron. The fourth casting, the right foot and leg, was made on March 26, and weighed 12,000 pounds. The right leg casting was considered a particular success:

The casting of the right foot and leg of Vulcan ...was

Age-Herald, 22 March 1904.

⁵⁵Information on the personalities involved in the casting came from J.L. Busby, "Vulcan Celebration Attracts Thousands--Iron Man Was Made by Union Molders," Labor--The News-History Magazine, 15 May 1905.; Rowell, p.23.; Erna Oleson Xan, "Vulcan Has a Hole in His Head," Birmingham News, 2 December 1962.

The following list of names is cast in the upper arm section of Vulcan's right arm, which was damaged on its return from St. Louis, and entirely recast from new molds by the H.T. Beggs foundry. This list is sometimes referred to as "the men who cast Vulcan"; this is not, however, entirely correct: S. Akin, F. Cahalan, G. Cass, D. Green, (O) Greener, (?) Greener, B. Plant, and (T) Wheeler.

⁵⁶Molding chronology and casting weights appeared in daily updates of the Vulcan work in the Birmingham Age-Herald, March-April 1904.

probably one of the most successful castings ever made in Birmingham...the iron shell was shown to be almost perfect, and there was not a flaw visible... It was an exceedingly hard casting to make, owing to the peculiar shape of the mold, the amount of metal required, and the size of it. Sculptor Moretti, who is also an expert on castings, said yesterday afternoon that he had never seen a piece of bronze casting which was better than that of the leg of Vulcan.⁵⁷

The left leg, weighing 12,000 pounds, was cast on March 30. The chest was cast next, on April 2. The chest was a smaller casting, weighing 8,000 pounds. The foundry turned out a casting approximately every five days, and once enough pieces were cast, the Vulcan statue was erected inside a scaffolding in the foundry yard. It was originally proposed that admission be charged to see the fully-assembled statue, but timing did not allow for this, and a plaster mold was erected instead (figure 6).⁵⁸ The statue was assembled in smaller sections to check the appearance and alignment of the joints, rather than strictly as an attraction.⁵⁹ The next casting, performed on April 13, was the shoulders, particularly challenging due to its shape and size. This casting was roughly 20' in circumference, and weighed 14,000 pounds. The casting of the smaller sections of the arms, and the accessories occupied the last weeks of the project. The most challenging part of the project remained--the casting of Vulcan's head.

Preparations for the casting of the head had been going on since the arrival of the pattern from New Jersey. The first task was the reconstruction of the pattern of the head which fell from a crane. Several days before the head was due to be cast, a mishap occurred at the foundry:

The modeling of the head was carried out on a sort of mezzanine platform over the soot and smudge of the foundry below. On the day when the head was completed, the rather rheumatic overhead crane rolled over it and hoisted it up and trundled down the shop to a point where the mold was to be made. The lowering had commenced, when an unusually severe twinge ran through the joints of the crane, and the head fell to the floor and resolved into a rubbish of

⁵⁷"Leg of Vulcan Makes Excellent Casting," Birmingham Age-Herald, 27 March 1904.

⁵⁸"Vulcan Statue is Nearly Completed," Birmingham Age Herald, 10 April 1904.

⁵⁹"Fitting of Vulcan Parts Together," Birmingham Age-Herald, 9 April 1904.

boards, excelsior, and plaster. The writer's limited knowledge of Italian prevents the quotation of Signor Moretti's remarks. At any rate, there was nothing to be done but to rebuild the pattern.⁶⁰

The most damage occurred to the forehead, which had to be rebuilt from scratch. Numerous lines are visible in Vulcan's head, but they are possibly mold parting lines (figure 7).

The broken pieces of the pattern were fit together, and backed with a thick coat of plaster. The cracks in the outside were filled with plaster, and smoothed over. The construction of the complex drawback molds took almost a month, as the intricate lines of the face were painstakingly difficult to mold. "Bricked up with mud one at a time around the plaster cast were 150 drawback molds. One for an ear, one for an eye; every little part of the body had to have its own drawback."⁶¹ Fred Beuttiker, foreman of the Vulcan crew, experienced particular difficulties with Vulcan's beard, as the plaster curls broke during the molding process. In order to finish the mold, Beuttiker actually sculpted some of the curls in Vulcan's beard himself, by manipulating the molding sand during the mold making process.⁶² The drawbacks were baked to an extra hardness to insure that they would not break during casting, and two days were spent building up the guards around the mold in the pit. The largest pit yet was dug in the foundry floor--12' x 12' x 7' deep--to accommodate the mold. Of the core making for the head, it was said: "It represents the most difficult task that the foundrymen have yet attempted, and when it is baked and placed in the pit ready for casting, they consider that they have completed the hardest casting ever made in Birmingham."⁶³ The 12,000 pound head of Vulcan was successfully cast on April 16, and was cleaned and finished two days later.

Conditions in the foundry were harsh and hectic. Fred Beuttiker and Nick Smith recalled working sixty hours a week for thirty-five cents an hour. The foundrymen often worked around the clock to keep up with the work, and Fred Beuttiker actually stayed on

⁶⁰Thomas B. Leonard, letter, "Vulcan Statue", Linn-Henley Library (south room), Vulcan Clippings File.

⁶¹Erna Oleson Xan, "Vulcan has a Hole in his Head," Birmingham News, 2 December 1962.

⁶²Ibid.

⁶³"Marvel of Vulcan Hardly Realized", Birmingham Age-Herald, 14 April 1904.

the job for six weeks without going home during the most demanding part of the project.

The casting process became the talk of the city. Local school groups were brought in to see the work in progress, and the successes and holdups were documented in the newspapers on a daily basis. The finished Vulcan was partially assembled to check for proper fit, and the scaffolding was shrouded to conceal the figure. The public curiosity generated by this spectacle spawned the idea to set up the plaster model and to charge admission toward the Vulcan fund. The public balked, and Vulcan viewing was made free of charge.

Vulcan's feet and thighs left Birmingham, bound for St. Louis on April 18, 1904, the same day that Vulcan's head emerged from its molds. The entire process, from 8' clay model to 55' "Iron Man", had taken approximately four months--a project Boston sculptor Cyrus Dallin said would take at least two years. The casting of Vulcan was certainly rushed, but not just to meet the opening day of the Exposition, April 30. Vulcan had to be in St. Louis by April 22, the day that the railroad tracks to the fairgrounds were to be torn up.

In summary, Vulcan is certainly a symbol of Birmingham's iron industry, but it is a literal, physical example of can-do attitude and technical knowledge present in the Birmingham Industrial District at the turn of the Century. On the other hand, an important factor in Vulcan's timely creation that should not be overlooked, according to Mr. James Ransom McWane, grandson of J.R. McWane, who cast Vulcan, is just plain hard work.⁶⁴

THE ST. LOUIS EXPOSITION

The last pieces of Vulcan were due in St. Louis by April 22, and the Exposition or Fair opened on April 30. Birmingham Steel & Iron shipped the first parts of Vulcan, the feet and thighs, from Birmingham on the 18th of April. Erection of the statue in the Palace of Mines and Metallurgy began as soon as the parts began to arrive, and by April 25, Vulcan was assembled to the waist. By the opening day of the Fair, Vulcan was still incomplete, as the foundry had, in haste, forgotten to cast bolt holes in one of the arm joints. Vulcan was not completed until mid-May, due to the difficulty of drilling new holes in cast iron in midair.⁶⁵

⁶⁴James Ransom McWane interview.

⁶⁵Rowell, 27.

The Louisiana Purchase Exposition occupied approximately 60 million square feet of land, and incorporated so many exhibits from so many states, countries and organizations that they can not possibly be enumerated here. The largest structures were devoted to themes which summarize the character of the Exposition--Agriculture, Horticulture, Machinery, Transportation, Electricity and Machinery, Varied Industries, Manufactures, Education and Social Economy, Liberal Arts, and Mining and Metallurgy. The Palace of Mines and Metallurgy was constructed at a cost of \$500,000 and measured 525' x 750'. The Palace as constructed differed substantially from the Beaux-Arts neoclassicism of the original design, which was unintentionally included in Fair literature.⁶⁶ Whereas the original Van Brunt and Howe design was derivative of McKim, Mead and Whites' "White City" from the 1893 Chicago Columbian Exposition, the Palace, as constructed, although it draws on ancient motifs, can be considered "modern", even radical for its time. In terms of massing and ornamentation, the Palace strongly resembles the anti-Beaux-Arts style of the Vienna Secession, which was challenging European architectural conventions at the time (figure 8).

The Palace of Mines and metallurgy was an impressive structure. The roof projected 18' from the walls. Each of the four main entrances was flanked by two 140' obelisks. Between and behind the obelisks, on the roof of the building, was a 30' diameter globe, supported by 28' human figures. The four main entrances were ornamented with sculpture which symbolized the metals gold, silver, iron, and copper. Sculpture on the other twenty entrances symbolized lesser metals or basic metallurgical processes. Two sides of the Palace were constructed as a colonnade, which allowed a quarter-mile of uninterrupted exhibit space. Inside the main exhibit room, forty-six islands separated by aisles created nine acres of exhibit space, more than had ever been created for an Exposition exhibit of mines and metallurgy.⁶⁷

The organizers of the Exposition desired a new direction for the mining and metallurgical exhibits. In 1901, fair authorities declared: "Processes of manufacture, wherein actual production is shown, will be encouraged, as being of more interest to the

⁶⁶World's Fair Bulletin vol.3., no. 1 (St. Louis: World's Fair Publishing Co., November 1901).

⁶⁷Mark Bennitt, ed., History of the Louisiana Purchase Exhibition (St. Louis: Universal Exposition Publishing Co., 1905), 625.

people than still exhibits."⁶⁸ Joseph A. Holmes, Chief of the Mines and Metallurgy Department at the Exposition, stated: "The great aim of the Exposition authorities is to show in the great places for exhibits at St. Louis not alone products and results, but the products and stages through which they pass in order that they may become a benefit to mankind."⁶⁹ The resulting exhibits from forty-one U.S. states and twenty-nine nations were divided into five groups, which were further subdivided into fifty-three classes which displayed mining and metallurgical processes and equipment used from preliminary prospecting to finished products.

The response to this opportunity to showcase state-of-the-art mining and metallurgical process and technology was overwhelming, and thirteen acres of additional space was created to accommodate the largest and most elaborate of the displays. The outdoor mining display was called the "Mining Gulch", and contained "practical, working object lessons of the methods and machinery used in the sinking and operation of mines".⁷⁰ The Mining Gulch measured 1,200' long x 300' wide, and featured reconstructions of several types of ore mines, including Missouri lead and North Dakota gold plants, with operating hoists, crushers, and beneficiating equipment. A working oil well was featured, as well as gem mines, smelters, a cement plant, pottery, foundry, waste rock tramway, and mine railway. None of these mines were actually extracting the material being processed, except for the coal mine exhibit. A fully-functioning coal mine was constructed to tap into a horizontal coal seam beneath the Exposition grounds. During the Exposition 2,000' of the seam was developed, the production of which was processed in an operating breaker and washer facility.

Other displays inside the Palace of Mines and Metallurgy ranged from operational, process-oriented, to static finished products. Bethlehem Steel, and the Pittsburgh Chamber of Commerce were among the organizations that displayed various finished iron and steel products. Vulcan and the accompanying Alabama exhibit were given 2,000 square feet of space. The available historic photographs and other documentation does not reveal Vulcan's exact location in the Palace. However, in 1903, J.A. Holmes told the Birmingham Commercial Club that he would give Vulcan a space

⁶⁸Anon. The World's Fair, St. Louis, 1903 (St. Louis: Louisiana Purchase Exposition Commission, 1903), 14.

⁶⁹Joseph A. Holmes, "Mining and Metallurgy," Worlds Fair Bulletin (St. Louis: World's Fair Publishing Co., 1904), 17.

⁷⁰Dorothy Daniels Birk, The World Came to St. Louis (St. Louis: Bethany Press, n.d.), 40.

"quite near the main entrance..[Vulcan] will front on one of the main aisles, with an aisle on each side".⁷¹ The most lengthy, nevertheless vague description of the Alabama exhibit states that: "At each corner on the front line of the space will stand a handsome pavilion constructed of ores and metals in a graceful style of architecture. The front line between these two pavilions extends about fifty feet, with the exhibits covering the space, except in an aisle fifteen feet wide, which extends from the main avenue of the building to the statue of Vulcan. The rear of Vulcan will be on a line with another main avenue which extends 750 feet through the building, and the exit on that side will be between the feet of the statue. The rest of the space will be filled by attractive exhibits covering all the mineral resources of the state so far as is known, and on one side of the aisle extending to the statue will be a booth and office from which literature regarding Alabama and the souvenirs of the Vulcan will be handed out."⁷²

The Alabama exhibit fell somewhat short of the program desired by the Exposition. Examples of minerals from twenty Alabama counties, including coal, iron ore, and limestone were shown, and the finished products of the Longview Lime Works, Tennessee Coal and Iron Company, the Republic Iron and Steel Company, and the Sloss Sheffield Steel and Iron Company were arranged about the feet of Vulcan (figures 9-10). Sloss and TCI originally intended to have their own exhibits, but later opted to join the Birmingham district exhibit.⁷³ The only feature of the exhibit that met the expectations of the Exposition was the rod mill display of Republic Iron and Steel, although Vulcan certainly stood out in the machinery-filled exhibition hall. On the opening day of the Exposition, the Birmingham Age-Herald ran a story, "Thousands Admire the Great Statue of Vulcan". The following was said of the Alabama exhibit: "It is decidedly different from any other mineral exhibit, and has attracted so much attention on that account. It is not as large and as complete as desired, but it compares well with other exhibits. The exhibit sent by Republic is very complete, showing all the raw materials and the process of evolution from this state until they leave the rod

⁷¹Birmingham Age Herald, 27 October 1903, n.p.

⁷²"Vulcan Soon to be on Exhibition," Birmingham Age-Herald, 12 April 1904.

No examples of the brochures or illustrations of souvenirs were located.

⁷³Birmingham Age-Herald, 28 October 1903.

mills a complete rod"⁷⁴ It is apparent that in this context, the author meant the word "complete" to mean thoroughly demonstrative of process, and that the Alabama exhibit did not measure up to the Exposition's requested programming in this respect.

The Vulcan statue--a classically-derived, symbolic image--was in a sense a dying gasp of Nineteenth-Century sensibilities, surrounded by the symbol of the Twentieth--the machine. Nineteenth century art and literature, particularly during the later Victorian era, were dominated by academic values--allegory and symbolism pervaded art which drew almost exclusively upon biblical and classical imagery. The influence of European movements such as cubism and futurism soon altered this aesthetic paradigm, and the concepts of abstraction inherent in the new styles allowed simple objects to stand for concepts and themes. Vulcan was created a few short years before this revolution began, and there was not yet an avant garde to criticize the statue as anachronistic, especially in interior United States cities such as Birmingham or St. Louis.

Vulcan was not so much an artistic anachronism as an example of a type of symbolic representation that was soon to be replaced by images of machines themselves. In art and advertising, shapes that the modern working man could relate to, such as the blast furnace and the hot metal ladle, replaced rarefied, neoclassical, schoolbook images of Greek and Roman gods as symbols, in this case, of ironmaking. Symbolism and metaphor were incorporated in the architectural detailing of the Palace of Mines and Metallurgy, but the only other geological exhibit to use sculpture was the Louisiana exhibit, which featured a biblical image--a pillar of native salt in the shape of Lot's wife.⁷⁵

Vulcan was, nonetheless, a great attraction, and unique to the Exposition. The newspaper accounts of the day were full of predictable hyperbole--"Vulcan is Attracting more attention than any exhibit at the fair!"--etc. Vulcan, coated in gray paint, stood on a low platform, with a mineral exhibit designed by Alabama State Geologist Eugene Allen Smith about his feet. Various legends, such as "Vulcan--God of Fire and Metals--Cast at Birmingham, Alabama, and "Iron is King--Its Home, Birmingham,

⁷⁴Birmingham Age-Herald, 1 May 1904.

⁷⁵The city of St. Louis also entered an allegorical figure, a bronze sculpture entitled, "The Spirit of St. Louis." It is now exhibited at the St. Louis Art Museum, the only Fair building remaining on the site.

Ala." were painted in gold lettering on the anvil pedestal, and on the sides of the display platform. A smooth path was left so that spectators could walk between his legs, and his upraised right arm reached up into the wooden ceiling trusses. A large bronze plaque on the anvil stand bore "Vulcan's Prophecy", penned by Birmingham Commercial Club Vulcan Committee member John H. Adams. Adams, born in Birmingham, England, came to Birmingham, Alabama in 1880. Adams is credited with the construction of the first basic open hearth steelmaking furnace in the South, and organized the Birmingham Rolling Mill Company, first manufacturer of rolled iron bars in Birmingham.⁷⁶ Adam's "Prophecy" captured the spirit of Vulcan's symbolism and Birmingham's intent for the exhibit:

Just as my stature towers above the sons of earth so shall the district, from whose breast the ore and coal were torn and fused to give me birth, exceed all others in "Times March" for o'er and o'er, nature hath flung her treasures with a generous hand, and Birmingham sits thronged. Both hemispheres can draw on her. The mineral wealth of every land is there allied to rule the world in future years.

From September 1 to September 20, one hundred judges from around the world judged the Exposition exhibits. Many accounts of the awards connected with Vulcan are confused. According to James MacKnight, both Moretti, and Vulcan were awarded "Exposition Gold Medals" in April of 1904, before Vulcan was completely assembled. According to MacKnight, "The jury in the Mineral Department awarded the Grand Prize of the Exposition to Vulcan. They awarded a silver medal to James R. McWane for casting Vulcan. They awarded a silver medal to me (MacKnight) for originating the idea. They awarded two silver medals to Moretti for sculpting Vulcan, and the heads of Christ and Chief Talladega."⁷⁷ Much is made of these awards in the subsequent Vulcan literature, but, it should be understood that the awarding of prizes at world fairs was more of a festive ritual or a congratulatory end-of-fair exercise than a distinction of long-term or far-reaching significance. Award-winning fair displays were often subsequently demolished upon the closing of events. James MacKnight's role as Alabama's Executive Exposition Commissioner, as well as other apparent, although undefined involvement in the administration of the Exposition should also be taken into account when considering Vulcan's awards.

⁷⁶Vulcan Clippings File, Tutwiler Collection, Linn-Henley Research Library, Birmingham Public Library.

⁷⁷Rowell, 34.

Vulcan's ultimate significance at the Exposition was as an advertising tool for the raw materials and finished products of the State of Alabama. Estimated attendance figures for the Palace of Mines and Metallurgy during the seven months of the Fair range between 18 and 19 million people. Visitors to the Alabama exhibit were welcome to choose from a group of six pamphlets which James MacKnight developed during late 1903-early 1904 that described Alabama's various resources and economic advantages. Experts on Alabama's natural resources were on hand to answer fairgoer's questions. Vulcan also received national newspaper coverage--an estimated \$150,000 worth. According to MacKnight, "The advertising of Birmingham through the exhibit has proved one of the biggest features, for space in papers will be given which could not be bought for love or money."⁷⁸

It is impossible to directly link the Alabama exhibit at St. Louis to the growth of Birmingham's iron-related industries, or to show any cause and effect relationship between the visibility of Vulcan and awareness of the mineral potential of the Birmingham Industrial District. Regardless, growth certainly did occur. In 1909, Alabama produced 1,763,716 tons of pig iron, worth \$22,222,00. Ten years later, pig iron production had risen to 2,044,937 tons, worth \$53,092,133. Figures for the mining and production of coal, iron ore, stone, clay, and coke all rose at comparable rates.⁷⁹

Vulcan proved so popular, that at the closing of the Exposition, several offers were made to purchase the statue. The city of St. Louis wanted to keep it, and San Francisco wanted to set it up in San Francisco Bay as a West Coast counterpart to the Statue of Liberty. An agreement was made to send Vulcan to the 1905 Louis and Clark Exposition in Portland, Oregon, and a 40' pedestal was constructed, but Birmingham ultimately reneged due to a lack of funds.⁸⁰ A proposal to erect the statue in Chesapeake Bay was

⁷⁸Birmingham Age-Herald, 13 March 1904.

⁷⁹Walter B. Jones History and Work of Geological Surveys and Industrial Development in Alabama, Bulletin No. 42, Geological Survey of Alabama (Wetumpka, Alabama: Wetumpka Printing Company, 1935), 36-37.

⁸⁰The funding of the Vulcan project is not discussed in the body of this report, as it is rather convoluted. Estimates place the cost of the Vulcan project somewhere between \$22,000 and \$27,000. Most of the money was raised from contributions from the following: Jefferson County (\$5,000), the City of Birmingham (\$500, not the \$2,500 requested, Ensley, Pratt City, and Woodlawn (reneged on their \$500 pledges), the United Mine Workers (\$500),

made, but came to naught. Vulcan lingered at the Exposition grounds until February of 1905, when he was dismantled and returned to Birmingham.

RETURN TO BIRMINGHAM

In 1903, before the St. Louis Exposition began, Exposition Director J.V. Skiff said that he "regarded the proposed colossus of Vulcan as the very best metal exhibit that has been planned for the Expo." According to Skiff, "it would command and receive universal attention...it could then be returned to Birmingham and set up as a monument that would last for centuries...these are features which do not often apply to exhibits sent to World's fairs."⁸¹

Despite Vulcan's popularity at the St. Louis Exposition, he was the object of controversy and neglect upon his return to Birmingham in February, 1905. No firm plans for his disposition had been made, although several locations were suggested, including the circle at Five Points South, Red Mountain, and perhaps most appropriately, a downtown location between the railroad tracks on Twentieth Street, dedicated to Birmingham

The Birmingham Belt Railway (\$500), the Birmingham High School and Water Works (\$100 each), Sloss-Sheffield Steel and Iron Co. (\$500), the Tennessee Coal and Iron Co. (\$500), the State of Alabama (\$1,500/2,500?), and France (\$5.00). Other funds were raised through stock subscriptions, sale of Vulcan statuettes (now rare collector's items), concerts (Moretti was an accomplished opera singer and friend of Enrico Caruso), political debates, art lectures, and \$700 was raised in admission fees for a baseball game between the Birmingham Barons and the New York Giants, featuring former foundryman Joe "Iron Man" McGinty. (McGinty was allowed to assist in the pouring of a piece of the Vulcan statue). The Louisville and Nashville Railroad donated free transportation to and from St. Louis. The Vulcan project, naturally, went way over budget. Moretti's fee of \$6000 was three times the original estimate. The Commercial Club was able to raise roughly \$15,000, which covered all but the foundry bill, which was reduced by the foundry owner as a civic gesture. The Commercial Club ended up with approximately a \$4000 deficit, which it paid for through Club funds and voluntary membership contributions. (source-Birmingham Age-Herald, various 1903-1906).

⁸¹Birmingham Age-Herald, 27 October 1903.

industrial magnate Henry DeBardleben.⁸² A location in Capitol Park (now Linn Park) in the city center was considered as early as late 1903, but was ultimately fought by local artists, who considered Vulcan to be ugly and misshapen, and groups which had already erected monuments in Capitol Park, such as the Daughters of the Confederacy. While deliberations proceeded, Vulcan lay in pieces in the weeds next to the Birmingham Mineral Railroad tracks on the side of Red Mountain near Twentieth Street.

Finally, a location at the Alabama State Fairgrounds was negotiated, and Vulcan was erected for the State Fair in October, 1906. During this period, Vulcan suffered physical damage. His right arm was destroyed in rail shipment to Birmingham, and had to be recast from new molds by the H.T. Beggs & Sons foundry.⁸³ The workers erecting Vulcan dropped one of his arms, damaging the hand.⁸⁴ Vulcan's right forearm was bolted on upside-down, so that he could not grasp his speartip, which remained at his feet, and was eventually lost, as was one of Vulcan's hammers (figure 11). Vulcan's anvil was placed behind his left leg rather than at his side, and as a result, he could not hold his hammer, which was laid on the working face of the anvil. An awkward wooden telegraph pole was placed under his left wrist to support his left arm, and guy wires were installed to help support his upraised right arm. In the 1920s, Vulcan's right thumb fell off, and he was disassembled for safety reasons, and then reassembled in the early 1930s.

During his three-decade tenure at the State Fairgrounds, Vulcan was incorporated in several advertising campaigns. The hole in his left hand, designed to accommodate the handle of his hammer, variously held an ice cream cone (figure 12), a pickle jar, and a bottle of Coca-Cola--advertising space sold by Fair authorities.⁸⁵ Some writers have described this phenomena as unflattering to Vulcan, and this attitude is warranted considering that Vulcan was once dressed in blue jeans, and his face and hair were painted in a garish, naturalistic scheme.⁸⁶

⁸²Rowell, 35-38.

Rowell explains the complicated events surrounding the decision to locate Vulcan in detail.

⁸³Rowell, 36.

⁸⁴The Birmingham News, 19 October 1906, n.p.

⁸⁵Rowell, 42.

⁸⁶Thompson, 15.

Vulcan's role at the Fairgrounds, however, can be considered a significant part of his career from a social perspective. Whereas Vulcan was a dignified emissary of Birmingham at the St. Louis Exposition, he was among familiar company in Birmingham, and presided over the festive atmosphere of the Fairgrounds. A part of the tradition of festivals, carnivals, and parades is often the mimicking, ridicule, or transmogrification of public symbols and figures. In terms of original intent, Vulcan may have suffered indignity at the Fairgrounds, but his as-conceived life was over after the Exposition. Vulcan's utilization as an elaborate billboard was certainly insensitive if he was perceived by the civic authorities of early Twentieth-Century Birmingham as a monument, a symbol, or a work of art, but it is apparent that he was not. Vulcan was used as a promotional vehicle. Vulcan was not consciously denigrated at the Fairgrounds, instead his role there can be seen as that of a mascot, an informal rallying point or figure for the people of Birmingham, especially during the years of the Depression, when popular stories about Vulcan were perpetuated. For instance, when his thumb fell off, it supposedly resulted in the death of a passerby, and Vulcan's hands were host to the nests of honey bees.

More significantly, Vulcan became a popular meeting place (figure 13). A letter written by a Mr. Clark H. Hogan regarding Vulcan at the Fairgrounds reminisces: " I was 12 when we moved to Birmingham in 1917, at which time the statue was at the Fair Grounds, and its location near the main gate on Third Avenue was the favorite meeting place. 'Meet me at the Iron Man' was heard as often as 'Going to the Fair' "⁸⁷ When Vulcan was disassembled in the 1920s, his parts became a popular playground for children. Vulcan's image became the subject of Birmingham Age-Herald cartoons (figure 14), which featured various tales of Vulcan's life in Birmingham, particularly his romantic involvements with Lady Electra, the gilt, Art Deco female personification of electrical power by sculptor Edward Field Samford which graces the roof of the 1925 Alabama Power Company building.⁸⁸

⁸⁷Clark H. Hogan, Palmerdale, Alabama, letter to a Mrs. Dent, 28 February 1986, photocopy in the collection of the Birmingham Historical Society, Birmingham, Alabama.

⁸⁸Cartoon, "The Lighter Side of Vulcan's Life," Birmingham Age Herald, 9 May, 1939. n.p.

This cartoon appeared when Vulcan was moved to the completed park on Red Mountain, and captures the spirit of the earlier cartoons through a summary of the high and low points of Vulcan's life, with obvious editorial, political overtones (figure 14).

Vulcan was certainly not treated with the respect intended by his creators, following the Exposition. Giuseppi Moretti, before his death in 1935, was quoted as saying "I almost wish I had never made him", in response to the movement to relocate Vulcan to Red Mountain, and the treatment of the statue at the State Fair Grounds.⁸⁹ Vulcan remained highly visible, however, and his stint at the fair brought him closer to his constituency, and his role as a fixture of popular culture bolstered his identification with the City of Birmingham.

VULCAN PARK

Serious agitation for the relocation of Vulcan to Red Mountain began in the mid-1930s. In 1933, an anonymous letter to a Birmingham newspaper from a member of the Birmingham Exchange Club suggested moving Vulcan to Red Mountain, to a location owned by the Tennessee Coal and Iron Company. The letter also suggested a landscaped park.⁹⁰ If the Exchange Club, and City Commissioner Lewey Robinson started the movement, however, it was the Birmingham Kiwanis which succeeded in the creation of Vulcan

⁸⁹Geneva Mercer, Moretti's lifelong assistant, in a tape recorded interview, 16 January 1980 (two cassette tapes), Archives and Manuscripts Division, Linn-Henley Research Library.

Other allusions to Moretti's concern for Vulcan and regret at its condition are found in Birmingham Age-Herald, October 31, 1937. Mention of the statue appears in articles about Moretti which were published soon after the St. Louis Fair, but it does not figure in illustrated articles about his work or in lists of his public sculpture prepared by him or Geneva Mercer prepared later in his career. This is possibly an indication that Moretti wished to disassociate himself from his once-important colossi. Moretti refers to the Vulcan statue as "him". This use of the familiar in referring to Vulcan extends to native Birminghamians today, and is utilized in this narrative.

⁹⁰Unidentified Birmingham newspaper, 1933. Original in Vulcan clippings file, Tutwiler Collection, Linn-Henley Research Library, Birmingham Public Library.

Author is likely La Noue Matta, an Exchange Club member who attempted to raise a \$6,000 subscription fund to move Vulcan in 1935, according to an undocumented newspaper clipping in the George B. Ward Scrapbook, Special Collections, Samford University Library, Birmingham, Alabama.

Park.⁹¹

In 1935 the Kiwanis formed a Vulcan Committee to pursue the matter of relocating Vulcan to Red Mountain, which included J. Mercer Barnett, a former Kiwanis International President; Thomas Joy, an engineer and builder; Erskine Ramsay, a Birmingham industrialist and philanthropist; and W.D. Moore, T.L. Bissel, W.A. Curry, and Alex Montgomery. Another Birmingham Kiwanis figure, and key player, was Thad Holt. Holt was appointed Director of the State Industrial Development Board early in the Depression, and served as Director of the Alabama Works Progress Administration during the time of Vulcan's move to Red Mountain. Holt served in various capacities for the WPA, and spent one year in Washington as Assistant Director to WPA Director Harry Hopkins. During the Depression, Holt oversaw the expenditure of \$43 million, and 50,000 workers in Alabama. Holt was also apparently enthusiastic about moving Vulcan to Red Mountain, but needed the popular support of the City of Birmingham before he could proceed.⁹²

Tom Joy was given the responsibility for generating the necessary support for the project, and in 1935 the City Commission placed the entire supervision of planning the park and the move of Vulcan in Joy's hands.⁹³ Joy initiated a city-wide support campaign. Knight and Kiwanis met with the Birmingham Park Board, and argued that "The Statue of Liberty is worth more to New York City than any of its skyscrapers", and that Vulcan was likewise Birmingham's symbol.⁹⁴ The arguments were apparently convincing, for shortly thereafter, Birmingham Park Superintendent Marshall filed a \$42,518.50 proposal with the WPA to move and reerect Vulcan in a new park atop Red Mountain. The proposal called for 662 man-months of employment for six months. The estimates for

⁹¹Birmingham is called the "Cradle of Kiwanis" by the organization. During the 1919 Kiwanis International Convention in Birmingham, the Club was purchased from its founder, Allen S. Browne of Detroit. The Birmingham Kiwanis Club is thus credited with the "freeing of Kiwanis". Frank Bromberg, Birmingham Kiwanis past Presidents biographies, J. Mercer Barnett file. Files in the office of the Birmingham Kiwanis Club, Birmingham, Alabama. It should be noted that the Kiwanis minutes for this critical period are missing from club records.

⁹²Rowell, 43.

⁹³Thomas Joy Obituary, Birmingham Age Herald, 14 May 1944.

⁹⁴unidentified Birmingham newspaper, July 28, 1935, Clippings File.

work were: \$23,000 for the tower, \$3,000 for rest room facilities, reflecting pool, \$4,000; and \$12,019 for "other", including moving the Vulcan statue.⁹⁵

An important part of the negotiations for Vulcan Park was the acquisition of the land itself. J. Mercer Barnett negotiated the land from J.L. Perry, President of the Tennessee Coal and Iron Company, which owned vast tracts of ore lands on Red Mountain. Perry authorized the sale of 4.45 acres of T.C.I. lands to the City of Birmingham for five dollars, for the purposes of creating a public park, on December 4, 1935.⁹⁶ An additional quarter-acre of former Birmingham Mineral Railroad right-of-way was sold to the City in 1951 in order to expand the park. The Mineral Railroad was constructed by the Louisville and Nashville Railroad between the 1880s and 1920s to connect the red ore mining and concentrating facilities along Red Mountain with the blast furnaces and other railroads of the City. The right-of-way runs the sixteen-mile length of Red Mountain. Ore trains passed under what is now Vulcan Park just to the north, crossing 20th Street on a wooden trestle.⁹⁷

Red Mountain is so named for the color of the iron ore which once outcropped at the crest of the mountain, before the cap of weathered iron ore was stripped off the top, and underground mining began. As the principle source of all iron ore mined in Birmingham, Red Mountain is the geographic symbol of the Birmingham District's geologic wealth. The physical linking of the cast iron god of metals, made from the ore beneath his feet with the mountain from which those ores outcropped, was an attractive and logical combination. Red Mountain was also appropriate as a location for Vulcan, for he could survey the metallurgical activities of the District that created him. When Vulcan was placed on Red Mountain, a plaque bearing the "Fulfillment of Prophecy", written by John H. Adams (author of the "Vulcan's Prophecy" that appeared on the plaque on Vulcan's anvil stand at St. Louis) was placed in the park, opposite the "Prophecy" of 1904. Both plaques are presently located at the base of the tower. The "Fulfillment" sums up the civic pride in the accomplishments of the industrial district and the spirit behind Vulcan's move to Red Mountain:

Anchored by links of steel, on Red Mountain's iron vein

⁹⁵unidentified, undated newspaper clipping, Clippings File.

⁹⁶Jefferson County Judge of Probate, Deed 2694:357.

⁹⁷Birmingham Mineral Railroad, Historic Site Survey
Birmingham Historical Society Records.

Our Vulcan views a city spread over hill and plain,
built like this tower, by men whose work and skill
And Birmingham's best nerve that helped them to fulfil
The prophecy he made in nineteen hundred four;
Our population grown since then to even ten times more
Who plead for art and science new victories to reveal
And build a greater city with the onward march of steel.

Vulcan is made from Sloss pig iron smelted from Red Mountain iron ore, but the ore mines belonging to Sloss Sheffield Steel and Iron Company are far from being "beneath Vulcan's feet", as popular rhetoric often states. Sloss-Sheffield's Sloss and Ruffner mine complexes are several miles to the east and west of Vulcan Park, respectively. Aside from the Lone Pine mine, the closest mine to Vulcan is the Valley View mine, located approximately one-half mile to the west, adjacent to "The Club" nightclub. The ore extracted from this mine was not consumed in Birmingham at all, instead, it was smelted by Central Coal and Iron at Holt, near Tuscaloosa, Alabama.

Much has been made of the fact that there is a mine underneath Vulcan Park, as it certainly serves to reinforce the Vulcan's association with iron. The mine at Vulcan park was called the Lone Pine mine, and shared its namesake with Lone Pine Gap, where Twentieth Street now cuts through Red Mountain. The Lone Pine Mine ceased operation prior to the first World War. From the arrangement of the mine entrance, it appears that a horizontal drift follows the strike of the ore bed for some distance underneath the park. Subsidence in direct line with the mine opening affects the arcade which connects the Vulcan tower with the gift shop. A large "cave", likely a collapsed part of the mine, was discovered fifty yards west of the tower during the regrading for the 1970 park renovations, and several hundred cubic yards of concrete were required to fill it in. The iron ore deposits were lean on this part of Red Mountain, and the Lone Pine Mine appears to be an early attempt at underground ore mining on a significantly smaller scale than later mining developments elsewhere.⁹⁸

In January of 1936, the TCI land acquisitions were finalized. Thad Holt secured \$44,062 for the Vulcan park project, \$38,874 of which was an outright grant, and the balance, a loan.⁹⁹ The

⁹⁸Lewis Shannon, Birmingham Industrial historian, interview with Matthew Kierstead, Birmingham, Alabama, Summer 1993.

⁹⁹Thompson, 15.

Newspapers with figures for the overall allocation of funds, and breakdowns of how those funds were to be spent

proposal of Birmingham architectural firm Warren, Knight and Davis was selected, with Knight being primarily responsible for the park design. Ground was broken on the Vulcan Park site during the third week of February. Former Commercial Club president and Vulcan developer Fred M. Jackson turned the first spade of earth. Leila B. McKnight, widow of James McKnight, said in a letter to the Kiwanis Club: "I am sure that all of those still living who cooperated with my husband rejoice as I do that through your foresight and efforts, Vulcan may yet become the magnet which will attract millions of visitors to Birmingham".¹⁰⁰ Crews worked on dismantling Vulcan at the State Fair Grounds during the summer. Vulcan's arm fell and destroyed the workers' scaffolding at the Fairgrounds, prompting replacement by members of the local Iron Worker's Union. Several 68' test borings were made at the pedestal site: apparently the bedrock at the proposed spot for the pedestal was poor, for the location was moved 8' south from the location originally intended.¹⁰¹ The pedestal foundation was poured in late April of 1936, and construction of the pedestal continued into the Summer.

The Vulcan pedestal as originally constructed was a 123-1/2' octagonal tower, tapering slightly from bottom to top. The tower rose from a single-story stone base, to a railed observation deck near the top, where rests the Vulcan statue. The tower averaged 26' in width. All exterior surfaces were laid up with irregularly-coursed, rectangular, quarry-faced, light brown ashlar sandstone blocks, which were obtained from the quarries in Lane Park. This stone was also used for many of the walls and paths at Vulcan Park.¹⁰² Sparing use was also made of a light-

appear in various newspaper clippings in the Vulcan clippings file at the Linn-Henley Research Library. All figures vary slightly.

¹⁰⁰The Kiwanian, Birmingham, 25 February 1936.

¹⁰¹"Making Ready for Vulcan," newspaper clipping, George B. Ward scrapbook, Samford University, Birmingham, Alabama, n.d.

¹⁰²James R. McWane, interview with Matthew Kierstead, Birmingham, Alabama, 13 July 1993.

The quarry in Lane Park also supplied the stone for Birmingham Zoo shelters and the Zookeeper's cottage. An undocumented newspaper article in the George B. Ward scrapbook at Samford University, "Stone Quarried in Lane Park", also states that Birmingham Park Superintendent R.S. Marshall opened up a quarry on a hillside in the northeast corner of the park. The rock was described as a beautiful pink sandstone, with "ore streaks" (color from iron

colored cement trim, which appeared at the crown of the pedestal, and was used as a capstone on the base structure. Many of the WPA workers who were employed in the quarrying and dressing of the stone were local skilled Italian stonemasons, who are listed on a plaque given by the Italian-American Progressive Association in memory of Giuseppe Moretti.¹⁰³

The structure at the base was, in plan, a large octagon, concentric with the tower, with an entrance facing a cascading fountain to the south. The entrance was guarded by an elaborate wrought iron gate, and the legend "Vulcan" was mounted over the doorway in bronze letters in an Art Deco typeface. The base was intended to be used as a museum and exhibit space, and contained niches for display cases on the outside walls. The space was lined with variegated Sylacauga marble, the thin slabs of which were sawn and installed so as to make the striations appear in mirror image. Fluted Doric pilasters separated the display niches. The floor was made of black and white marble shapes laid in an elaborate geometric pattern.

The shaft of the tower was augmented with four shallow streamlined decorative buttresses, with light stone caps, which rose approximately 15' from the flat roof of the base structure. Located at the center of the shaft is the original alternating spiral-and-landing staircase, lined with Sylacauga marble. The ornate marble landing, with elaborate metal railings was removed when the tower was renovated. The stairwell was illuminated by two sets of narrow vertical windows. Ninety stairs led to the

impurities, and now brown from exposure to air). This stone was used for the Woodward and Ensley bathhouses, and the Central Park community center. It also stated that the quarry was to be made into a rock garden, which pinpoints its location.

¹⁰³The stonemasons are, listed in order: Gene Bone, Calogero Bordenca, Martino Cantesano, Elviro DiLaura, Francesco Giovino, Salvatore Giombrone, Carmelo Raco, Francesco Mazzara, Nicola Montana, Onofrio Paladino, Pietro Scalia, Alberto Schilleci, Antonio Scozzaro, and Alfonso Arnone. Francesco "Frank" Mazzara was known as a crew foreman, as he had a good command of the English language (Birmingham Historical Society, summary of interview with Vincent Mazzara, 26 February 1993.) A letter to the editor (undocumented clipping) in the Vulcan clippings file in the Linn-Henley Research Library from another Vulcan Park stonemason, Anthony A. Danielle, lists Antonio Mures, Louis Levin, Olindo Nativi, George Easter, Carl Bearden, Robert Elgin, Z.B. McGinnis, Sebastain Peirane, Carlo Mazarro, as Vulcan Park stonemasons, and a Mr. Froelich as "the Superintendent".

observation deck approximately 25' from the top of the shaft. The metal railings of the deck employed a repeated "v" motif, and the deck was supported by curved metal brackets. The door to the deck, like the tower entrance door, was of coffered metal construction. A fluted square keystone adorned the frame of the observation deck door frame.

The structural engineering firm for the pedestal was W.H. Armstrong of Atlanta, Georgia. The interior structure of the pedestal (figure 15) was of 9'-9"-high cast-in-place, vertical reinforced concrete members at the eight points of the octagon, with horizontal connecting floor tiers at regular intervals.¹⁰⁴

Stylistically, the Vulcan Park pedestal can be described as a rusticated, restrained streamlined Art Moderne structure. Previous designs, several of which appeared in Birmingham newspapers in 1935, were wider at the base, with rising setbacks, much like the commercial architecture of the day. These designs appeared squat, diminishing the appearance of Vulcan as drawn. These designs also incorporated streamlined human forms at intervals around the base. These streamlined figures clashed with the classically-derived Vulcan. Apparently Warren, Knight and Davis were sensitive to these issues, as the tower as constructed was appropriately slender, and the human figures were condensed into streamlined buttresses. These buttresses, and details such as the observation deck railings, were decidedly Art Moderne, yet they are unobtrusive. The use of the quarry-faced stone added an appropriately rugged texture to the pedestal. In terms of style and design, the Vulcan Park tower withstood the test of time aesthetically. The simple geometric design, with rough-faced stonework, and relative restraint in the use of Art Deco/Art Moderne ornamentation was not classically derived, and therefore not the most appropriate choice for Vulcan as portrayed by Moretti, but the design complemented Vulcan, rather than overwhelming him.¹⁰⁵

While work on the park progressed, the pieces of Vulcan were brought up Red Mountain on the old Birmingham Mineral Railroad tracks, and laid at the foot of the pedestal, where they became a

¹⁰⁴All references to Vulcan Park tower construction details derive from a copy of a set of original Warren, Knight and Davis drawings, 15 sheets, dating variously 1936-1937. Copies from Nimrod Long and Associates, Architects, 2213 Morris Avenue, Birmingham, Alabama.

¹⁰⁵Earlier designs for the tower included far more in the way of buttresses and streamlined moderne decoration. The eventual use of restraint is fortuitous.

popular photographic prop and playground for children (figure 16). Vulcan received a new paint job while he was disassembled. A coat of aluminum paint was applied, and details such as his eyes and eyebrows, sandal straps, and apron were painted a darker color. In November of 1936, a hoist was fashioned using a large oak tree, and the right leg of the Vulcan statue was hoisted to the top of the pedestal at 10:00 a.m. on November 12 (figure 17). Assembly of the Vulcan statue was completed in early May of 1937, and the scaffolding was removed. Completion of the grounds and structures at Vulcan Park dragged on through 1937 and 1938, and the job was completed in April of 1939. It is not clear why it took so long to complete the construction of the walls and parklands. Shortages of either labor or money are alluded to, and indeed, sixty of the 130 men working on the park were diverted to the PWA Birmingham industrial water supply project.¹⁰⁶

When Vulcan Park was completed in 1939, the dedication of the new park was celebrated with a festival of unusual magnitude and proportions. A nine-night festival was planned, to be held from May 8 to May 17. Erskine Ramsay was appointed president of the Vulcan dedication ceremony committee, and numerous other city officials were involved in the organization of the event. A three-night theatrical extravaganza presented a drama based on the history of Vulcan (who was played by a young George Seibels, later mayor of Birmingham), DeSoto's visit to Alabama, and the early history of Birmingham. The committee hired New York theatrical producer William F. Baker to direct the cast of over 1,200 players. Baker, after reviewing the committee's proposal, said "There is a wonderful opportunity offered to portray the symbolic significance of Vulcan in the wealth of natural resources of the Birmingham District, particularly in the iron and steel industry, and in depicting the actual historic events of the valley, a rich field for dramatic presentation."¹⁰⁷ Outdoor stages and an amphitheater were constructed, and a massive advertising campaign was initiated. Event planners expected 50,000 people from all fifty states (though it is unlikely that these ambitious figures were attained) at "The greatest civic and historic event in Birmingham since the semi-centennial in 1921."¹⁰⁸

Vulcan was ensconced in his new surroundings for only seven

¹⁰⁶Undocumented newspaper article, George B. Ward scrapbook, Special Collections, Samford University, Birmingham.

¹⁰⁷Vulcan clippings file, Linn-Henley Research Library, Birmingham Public Library.

¹⁰⁸Ibid.

years, when a major change was wrought. In 1946, Paul Moon, the Chairman of the Birmingham Junior Chamber of Commerce "Jaycees" Safety Committee, conceived an area traffic safety campaign he called the "Light of Life". A beacon would glow green when the streets of Birmingham were safe, and red for twenty-four hours after a traffic fatality. The Birmingham Park & Recreation board reacted favorably to the idea of a "temporary" installation of the beacon. The Alabama Neon Sign Company, supplied with funds raised by the Jaycees, installed the "torch" in Vulcan's right hand (figure 18). The torch consists of sixteen green and sixteen red neon tubes mounted axially on a truncated aluminum cone which rotates to facilitate the replacement of the bulbs. The bulbs were modified to burn yellow during the Iran hostage crisis and Gulf War. A hole was cut into Vulcan's hand to access the torch, electrical wires and transformers were installed inside Vulcan's right arm, and safety cables were strung along his body. The "Light of Life" was first lit on October 23, 1946. Ten days later, on November 1, the first traffic fatality was indicated by the red light.

The "Light of Life" campaign, and Vulcan's torch, soon became internationally recognized, as European countries inquired about the torch. The safety symbol became nationally popular, and other American communities installed their own "Light of Life" torches, although none so impressively mounted as Vulcan. Vulcan's torch hovers 560' above Twentieth Street, the main thoroughfare of downtown Birmingham, and is visible from a great distance from both sides of the mountain on a clear night. The popularity of the torch resulted in its permanent installation, despite intermittent electrical problems that impair its operation.¹⁰⁹

The original WPA layout of Vulcan Park is difficult to ascertain. The topography is particularly erratic; Birmingham Park Superintendent R.D. Marshall called the property, which has a total change in elevation of 97', the "roughest four and a half acres I ever surveyed".¹¹⁰ As a result, the original paths are curved, and many levels are linked by flights of steps. The best understanding of the original park layout can be had from visual

¹⁰⁹Rowell, 47-48.

Regarding the temporary intent for the torch, Rowell connects Jaycees President Clarence Boggan with a quote: "the torch would be temporarily put in Vulcan's hand, and it would be removed after the Jaycees safety campaign was concluded."

¹¹⁰George B. Ward scrapbook, Special Collections, Samford University, Birmingham, Alabama.

sources, however, a brief description is appropriate.¹¹¹

Vulcan Park was originally accessible from Twentieth Street by streetcar and automobile. The streetcar entrance was at the northern tip of the property, where the streetcar line ran along the west side of the street. Passengers would alight at the top of the hill, and climb a set of steps flanked by sandstone piers and walls with capstones, and proceed along a wide, walled patio, which had a view of Birmingham to the north. This patio was just above the right-of-way of the Mineral Railroad. Once the end of the patio was reached, parkgoers turned right, and proceeded up another set of steps to a "Y" junction, where they could continue up to the left or right. The left hand steps led to the main observation area (figure 19), and the right hand steps past the mine entrance to the rest rooms. The stone walls at the mine are notable for subtle string courses of narrow stones set into the larger ones. At the top of each of these paths was a path that linked the two that went along the edge of the slope, and a path that led to the base of the Vulcan pedestal. A third path, with Red Mountain iron ore walls, led from the main observation area to a set of steps which led to another pedestrian entrance on Twentieth Street, and a walled, terraced picnic area. This path continued south, to the souvenir shop, and a series of looping, wooded trails on a steep slope. Approaching the park by automobile, the visitor would proceed past the streetcar stop to a ninety-degree right-hand driveway, flanked by concrete-urn topped sandstone piers with trailing wing walls. The drive swung around to the northwest, and climbed a short but steep hill. At the top of the hill, automobiles passed through a gate with smaller, finial-topped piers, and entered a small parking lot, with the gift shop to the right, and the pedestal directly to the north. The approach to the pedestal was dramatic; the visitor walked up a set of tiered steps that flanked three illuminated, cascading pools to reach the entrance to the tower.

No plans of the original Vulcan Park grounds have come to light, and no landscape architect has yet been connected with the project. Considering that the project was built by the WPA, it is possible that the plans were generated by an uncredited master craftsman familiar with the issues at hand. On the other hand, a known local architectural firm designed the pedestal. The

¹¹¹The best sources of visual information on Vulcan Park are photographs in Kiwanis 1938 brochure Birmingham's Vulcan, and 29 February 1970 Elliot and Bradford map showing conditions existing in 1969 and proposed alterations, including structures and contour lines. No original drawings or plans for the park have been discovered, and the Birmingham Park and Recreation Board has no original or later park drawings.

pedestal was, however, both an architectural and an engineering feature, designed to carry a heavy load and accommodate people. It does not appear that Vulcan Park, as opposed to the pedestal, was conceived or executed with the same degree of competence or vision. The construction of Vulcan Park dragged on for two years after the completion of the pedestal, and the project was stalled by labor troubles. Photographs of Vulcan Park in the early years of its existence do not reveal a particularly lush or imaginative planting scheme. The pathways connected the features in a logical manner, and conformed to the irregular topography. Standard concrete-and-plank park benches appeared here and there, and deciduous trees dotted the lawns (figures 20 -21).

Planting schemes at Vulcan Park appear to have been inconsistent. Originally, much of the park, especially the periphery, was selectively cleared, with many original trees retained. These areas were planted in a naturalistic manner, so as to blend in with the surrounding woodlands, and augmented with plants such as ivy, which was used to complement the rusticated stone walls. These areas, where the natural ground cover was once controlled, have become overgrown. At times, Vulcan Park was intentionally planted using species indigenous to Alabama. Flowering trees and shrubs included azalea, dogwood, and laurel. Park horticulturalists succeeded in grafting pink and white flowering dogwoods, producing a tree that bloomed in both colors, which generated a sensation and many requests for information.

The naturalistic, Olmstedian approach to park landscaping at the periphery and on the trails was countered by planting schemes utilized in the open areas at the base of the tower, which was surrounded by lawns. This area was not planted in beds. The summer flower beds contained mostly annuals, and tulips were particularly popular. Red and yellow were prominent colors, and often the annuals would be planted in decorative patterns on the hillside, such as one design that featured the Confederate and Union flags.¹¹²

Vulcan Park, like Vulcan itself, was perceived early on as a promotional vehicle, and an entity suited to change, rather than an attraction imbued with any sanctity. In the early 1950s, Birmingham Park Commissioner Connor stated that Vulcan Park "could be the prettiest spot on earth". According to Connor that

¹¹²Park planting information was obtained from Carl Mattil, former Vulcan Park grounds keeper (now a Birmingham Park and Recreation Board horticulturalist) interview with Matthew Kierstead, Birmingham, Alabama, 20 July 1993; Tom Hill, a Vulcan Park grounds keeper from 1946 until the early 1960s, interview with Matthew Kierstead, Birmingham, Alabama, 13 August 1993.

since the park belonged to the city, "The city can spend money for anything it desires to put there."¹¹³ Unfortunately, this attitude resulted in numerous proposals for additions to Vulcan Park, only some of which became realities. A World War II memorial, the project that is associated with this rationale, is the first of many examples of why the symbolic message behind Vulcan park has been lost, and how the park became a sort of default location for various schemes, and the main object of local tourism ventures. In 1950, half an acre of land adjacent to the streetcar entrance, directly below the scenic overlook, was purchased from the Tennessee Coal and Iron Company as a location for a World War II memorial sponsored by the United Veterans Organization of Jefferson County. In order to better serve this park, the American Legion built a parking lot adjacent to the memorial, on Twentieth Street. This park, which contained a fountain, and marble benches and tablets, no longer stands.

In 1953, Vulcan and Vulcan Park featured in the first major regional tourism venture since the park dedication. The "Vulcan Trail," a scenic driving tour developed by Birmingham and the Alabama Motorists' Association, highlighted Vulcan Park as a stop. In fact, the automobile has figured largely in changes to Vulcan Park. In 1953, the original parking lot was expanded to accommodate visitors. This required filling in much of the area where the loop trails were, at the south end of the park. Vehicular access was a problem due to overcrowding on the narrow access road, and a reservoir lane was built to accommodate the cars. In the 1970s, the original entrance to Vulcan Park was closed entirely in a land swap with the radio station adjacent to the park, leading to the acquisition of the current parking lot.¹¹⁴

During the 1950s and 1960s, proposals to promote Vulcan Park as a major regional attraction ranged from the sublime to the ridiculous. A proposal was made to develop the nearby Valley View iron mine into "Vulcan's Iron Wonderland", a subterranean tour that featured a boat ride into the flooded mine workings. Whereas this scheme was at least relevant to Vulcan in terms of the relationship to iron mining, the proposal to display a World War II submarine in Vulcan Park was not. These proposals were bypassed, although the park has been host to a moon rock, a Roman coin bearing Vulcan's likeness, and a fountain with thousands of illuminated jets of water dancing to music. The statue of local religious figure Brother Bryan, now a landmark at

¹¹³"WW II Memorial to be Located at Base of Vulcan,"
Birmingham News, 10 October 1950.

¹¹⁴Birmingham News, 27 January 1972.

Five Points, in Birmingham's Southside neighborhood, was briefly installed at a location in Vulcan Park which was called "Prayer Point." Interdenominational services were held there for a time, and then the statue was returned to its present location.

By the late 1960s, Vulcan Park was deteriorating physically, and the condition of the park was thought to reflect poorly on Birmingham. In March of 1968, the Birmingham News, in an editorial titled "Taking a Look at Vulcan", used the term "urban blight" to describe the condition of the park.¹¹⁵ As early as 1964, agitation for an elevator appeared, and by the late 1960s, issues of access, graffiti, obsolete restrooms, faded museum displays, and structural cracks were being raised. By 1969, the Birmingham Park Board said that if repairs were not made, Vulcan Park would have to be shut down. Water was leaking into the tower, the steps were rusting, and plaster was falling. The three reflecting pools were cracked, leaking, and reduced to serving as receptacles for trash.¹¹⁶

Vulcan, and the physical integrity of Vulcan Park suffered relatively little compared to the effects of the late 1960s, when Vulcan Park was the object of a new wave of civic boosterism. On the eve of the City's 1971 centennial, Vulcan park was again perceived and marketed as a major destination for Birmingham tourism. Some of the schemes for Vulcan Park were grandiose, and included features such as a mountaintop hotel, and a personalized rapid transit system which would link the park to the Birmingham Zoo, Botanical Gardens, and other key points in the city. These concepts never came to fruition, but Vulcan Park was nonetheless extensively modified.

As early as 1966, Birmingham Park Superintendent Frank Wagner proposed that the City allocate \$30,000 of a \$300,000 bond issue to construct new concessions, a souvenir shop, and restrooms at

¹¹⁵"Taking a Look at Vulcan," Birmingham News, 3 March 1968.

Although this editorial expresses concern for Vulcan Park, it also seriously suggests that Vulcan's exposed derriere be covered in order to put an end to the complaints of Homewood residents. Vulcan's bottom has long been the butt of serious complaints, and more humorous commentary, such as the local radio hit "Moon over Homewood".

¹¹⁶"Vulcan's Stairs are barrier to great sight for many," Birmingham News, 23 July 1964; "Most famous citizen needs a sprucing up," Birmingham News, 8 January 1968; untitled, Birmingham News, 10 April 1969.

Vulcan Park.¹¹⁷ In 1969 the City floated a \$1.9 million bond issue, \$1.1 million of which was allocated for the renovation of Vulcan Park. The designs of the Birmingham architectural firm of Elliot and Bradford were approved in late 1969, and the City entered into a contract with Dunn Construction for the physical work on December 4, 1969. The job ran some 260 days over, due to strikes that affected various building trades. The park was reopened on October 25, 1971, with an official reopening for the public on November 12, 1971. The total cost of renovation was \$1,010,235.74. ¹¹⁸ Of the new Vulcan Park, Birmingham Mayor George Seibels said "There is nothing in Birmingham I feel more keenly about. In my thirty four years here, this is the most aggressive, imaginative attempt of the Park and Recreation Board to give us a first-class tourist attraction."¹¹⁹

Recent awareness of the history and value of the public works executed by the Works Progress Administration makes Vulcan Park as originally constructed an important part of Vulcan's historical context. Unfortunately, the 1970s "renovation" of Vulcan Park by Elliot and Bradford seriously altered, destroyed or hid most all of the original WPA park features, and quite literally altered the "lay of the land". Except for the tower, all original structures were destroyed, including the giftshop, restrooms, and cascade fountain. The museum at the base of the tower was removed, and replaced with a new structure. The original tower cannot even be seen, as it was sheathed in white Georgia marble. The marble sheathing was affixed to a metal framework which was attached to the tower with bolts that penetrated the original sandstone blocks, and anchored into the concrete frame. Dark, flaring metal roofs cover the structure at the base and at the enclosed observation area at the top of the tower. The roofs, marble sheathing, and the addition of an external elevator contribute to an inappropriately contemporary environment for the Vulcan statue. The statue is no longer visible from the observation deck, the only place from which the statue could be viewed as originally intended--close up, and from below. The increased width and presence of the pedestal is out of proportion to the statue, which is now visually overwhelmed.

A new gift shop was constructed, with a pavillion connecting it to the pedestal. The new gift shop, new fountain, arcade

¹¹⁷Birmingham News, 28 February 1966.

¹¹⁸Thompson, research notes for "Vulcan: Birmingham's Man of Iron": Marion Bradford's files.

¹¹⁹Vulcan Park clippings file, Special Collections, Samford University, Birmingham, Alabama.

columns, and other details all share octagons as a motif, the most intrusive octagonal feature being the bunker-like structure which defines the access path. Construction materials include a tan, exposed aggregate wall and pavement material, and white Georgia marble. The wrought iron gates at the arcade entrance to the tower, which were dedicated to Kiwanian J. Mercer Barnett, were discarded (figure 22). The gates were later retrieved from the site, and are mounted on the wall of the conference room in the Birmingham Kiwanis office.

Unlike the J. Mercer Barnett gates, the present disposition of the George Hutchinson Clark collection of Alabama minerals, which was installed in the museum at the base of the Vulcan Park tower in 1941, is not known. The mineral collection was given to Birmingham as a gift by Clark's family. The product of forty five years of collecting and weighing literally tons, the Clark collection included samples of every known mineral in the state, and was conservatively appraised at \$50,000 in 1941. The collection was appropriate for Vulcan Park, as it was an excellent way of showcasing the economic geology of Alabama. Tom Joy of the Birmingham Kiwanis appropriated the collection for the space in the tower, which had been designed as an exhibit space, but had been empty since construction was completed. Display cases were built for the marble-lined museum space. Joy believed that the Vulcan Park Alabama mineral exhibit "should be the first step toward a permanent museum for Birmingham". Dr. Russel S. Poor, of Birmingham Southern College prepared, labeled, and installed the exhibit. The Clark collection was said to be "an exceptionally complete collection of Alabama's minerals". Included in the collection were ores and other raw materials used in the production of iron, asphalts, barytes, copper, gold, graphite, pyrite, lead, zinc, tin, manganese, ocher, limestone, marble, slate, bauxite, cement, and clays, all of which have been found, mined, quarried or manufactured in Alabama at one time.¹²⁰

The location of this collection is presently under investigation. The collection was said to be stored by the Birmingham Park and Recreation Board, however, inspection of that collection revealed that it was not the Clark collection, but a display of Birmingham-area geological samples of rocks and minerals which had been placed in the "new" Vulcan Park tower museum in the early 1970s by the American Institute of Mining and Metallurgical Engineers. Only one sample, a piece of Red Mountain iron ore, had a label on it, the condition and contents of which indicate that

¹²⁰ ¹²⁰ "Arrangements to put Clark minerals into monument made," and "Vulcan base to house minerals-\$50,000 collection will be installed by park board next month," Vulcan clippings file, Linn-Henley Research Library, Birmingham Public Library, n.d..

it may have come from the Clark collection. It is not clear when the Clark collection was removed from Vulcan Park, or where it has gone.

The removal of the cascade fountain, and the enlargement of the gift shop and parking area at Vulcan Park required extensive regrading of the area, further altering its original character, and necessitating the removal of WPA stonework.¹²¹ The only remaining WPA features are some damaged and deteriorating walls and walkways. At the north side of the park, where the old Vulcan Park streetcar stop was located, the original flat stone pathway with steps, and walls with piers and capstones still extends from 20th Street, south past the mine entrance (now bricked up) to the rear of the new giftshop. The mine entrance, once an integral part of the park's historical theme, was laid up with cinderblocks as a safety measure in 1964, when part of the Lone Pine mine collapsed and caused a cave-in 50' west of the pedestal.¹²² The mine entrance follows the strike of the stratigraphy and the ground is subsiding under the arcade pillars directly in line with the drift opening. Changes in transportation preference and technology have made the automobile the sole method of visiting Vulcan Park, and this formerly important gateway to the park is now bypassed by park visitors and maintenance staff alike. The path which branched off to the left from the first junction has been demolished, however, a stone bench survives at this location. On the side of the embankment to the west of 20th Street, the walled steps leading from the street up to the park are blocked, and are heavily overgrown, as is the original walled picnic area. The elaborate pillared entrance to this path was demolished, and the present location of the path entrance is obscured.

Above this area is the current picnic area, and the original outside wall constructed of large pieces of Red Mountain iron ore is still intact. The capstones, as well as the other retaining walls in the new picnic area date from the later renovation. An original culvert and retaining wall follow the south side of the steep access road, and original stone-lined drainage culverts, one with a head wall, cross the road at its foot. Only the southernmost of the two stone piers which flanked the Twentieth Street entrance road survive. In one of several attempts to improve traffic flow at the park, the intersection of the two

¹²¹For references to the Vulcan Park layout and landscaping, refer to the copy of the Vulcan Park plan drawing by Elliot and Bradford, 29 July 1970, Birmingham Historical Society Vulcan files.

¹²²Birmingham Age-Herald, 15 December 1964.

streets was recontoured from a dangerous, perpendicular configuration to a sweeping one, necessitating the demolition of the flanking pier and wall. The surviving south pier and gate wall is now the most obvious and visible original WPA element at the park, as the other walls and paths are overgrown or hard to access. A particularly significant surviving feature is a three-piece cast iron sign on the west side of Twentieth Street that indicates the top and bottom of the Red Mountain iron ore seam. This sign, now overgrown and damaged by sliding rock, was given to the city by Birmingham industrial magnate and philanthropist Erskine Ramsay.

ARTISTIC CONTEXT

Vulcan is an example of what is termed a colossus, "a statue of gigantic size and proportions."¹²³ The tradition of the colossus dates to the ancient Egyptian world, where colossal stone figures were erected to honor the pharaohs. The term was first used in the writings of the Greek historian Herodotus, who described the Egyptian colossi erected for Amenhotep III and Ramses II. The most notable ancient colossus was the 105' Colossus of Rhodes erected in 290 B.C. by that city to honor Helios the sun god. Created by the Egyptian sculptor Chares, the statue, considered one of the "seven wonders of the world", was destroyed by an earthquake in 224 B.C. Roman emperors followed the example of the Egyptians, and also created colossal statues to celebrate their own image. Nero had a 106' statue of his likeness erected in Rome, and a 30' seated image of the Emperor Constantine was made, of which only the 8' tall marble head survives.

Colossi reappeared with the neoclassical movement in Nineteenth Century art and architecture, which drew on classical antiquity, particularly from the Roman world. An early example of this is Antonio Canova's 11' marble Napoleon as Mars, sculpted 1802-1811. L.M. Schwanthaler created a 60' bronze embodiment of Bavaria in Munich, 1837-1850, and Jean M. Bonnassieux constructed a 52' Notre Dame de France in bronze for Le Puy en Vely, France, in 1860. Ernst von Bandel erected an 85' tall statue of Arminius made of copper sheets over an iron frame in 1875. The culmination of the Eighteenth Century colossi, and by far the largest, was Frederic Auguste Bartholdi's Liberty Enlightening the World.¹²⁴

¹²³Webster's Dictionary, 9th ed., 1988, 261.

¹²⁴John Schnorrenberg, "Vulcan, the Birmingham Colossus," September 1991. photocopy, n.p., Birmingham Historical Society files, Birmingham, Alabama.

Liberty Enlightening the World, or the Statue of Liberty as it is popularly called, was conceived as a pledge of Franco-American friendship by French intellectuals in 1865, and was given to America as a gift to celebrate the 1876 Centennial. Liberty, at 151', is approximately three times the height of Vulcan. Liberty is not cast, but is constructed of thin copper sheets attached to a framework of iron beams, the engineering of which was assisted by the French structural engineer Gustave Eiffel.

Vulcan and Liberty were, however, created for very different reasons--Vulcan was a hastily conceived and executed piece of economic boosterism, and Liberty was an intellectually-conceived, international gift. The circumstances of their history and technology differ greatly, yet the two statues do share formal aspects of heroic sculpture that place them in the same league. Both works are heroic by virtue of their colossal scale. Liberty is closer to the heroic ideal, with flowing, expressive drapery and a far more idealized face. Most significantly, the two works share the iconographic feature of the strong, vertically confined pose and upraised right arm. Both works employ hand-held objects in their iconographic schemes; liberty's are more allegorical than Vulcan's. Vulcan and Liberty are quite similar in terms of formal elements; the sex of the figure has been changed, and book and torch have been exchanged for speartip and hammer.

Vulcan's claim as the largest cast iron statue in the world is particularly significant for Birmingham, as it is a city built upon the iron industry. The creation of a work that could challenge the stature of Birmingham's Iron Man was and remains unlikely for reasons other than logistic and financial. Cast iron has traditionally been a less popular medium for elaborate sculpture in general, and monumental sculpture in particular, as compared to the overwhelmingly popular choice of bronze. Cast iron, although high in silica, is a ferric compound, and is prone to oxidization, like bronze. Both metals develop a patina, an oxide coating which is protective, only more so in the case of bronze. Cast iron has a relatively low tensile strength, making it more suitable in situations where it supports load by compression, whereas bronze can support its own weight over a longer distance using a thinner section. Cast iron cannot be worked as a solid, only machined and cut, and is not easily welded, as is bronze. Cast iron is a popular material for casting small, ornamental statues or decorative iron work, due to its low cost and ease of casting. Non-load bearing applications such as cast-iron store fronts are another common use of the material.

Vulcan was made from iron not just because there was a lot of it in the Birmingham area, but because it was what Birmingham was all about--a city and a district built upon the iron industry. Under other circumstances, bronze, or a copper skin over an iron

framework probably would have been the medium of choice.¹²⁵ Comparison with the materials used for the eight largest colossi in the world certainly supports the choice of bronze, or iron as a structural support for a thin, non-ferrous metal skin.¹²⁶

Another notable American colossal iron sculpture is the Bartholdi Fountain executed by Frederic Auguste Bartholdi. Like Vulcan, it was created for a great fair, in this case, the 1876 Philadelphia Centennial Exhibition. Originally titled Fountain of Light and Water, it was intended to symbolize those elements. The composition of the forty-ton, 30' fountain includes 11' caryatids which, surrounded by sea creatures, hold aloft a large basin originally ringed with gas lamps, now replaced with electric lamps. The iron castings were painted to resemble bronze. Bartholdi believed his fountain to be symbolic of the modern city, and anticipated that many American cities would want to purchase one. The only other example, however, was placed in Rheims, France, and no longer survives. After the Philadelphia Exposition, the Capitol Architect purchased the fountain at the urging of landscape architect Frederick Law Olmsted. It was placed in the Botanic Gardens at the Capitol, and later relocated to what is now known as Bartholdi Park.¹²⁷

Another American sculpture which combines cast iron with the colossal mode is the Herman monument in New Ulm, Minnesota, which for fourteen years before the creation of Vulcan was the second-tallest statue in America. Named for a First Century A.D. German tribal warrior, the Herman monument was constructed in 1890 as a symbol of ethnic unity by the Sons of Herman Lodges, a national German-American club. Located in Herman Heights Park, the statue overlooks the Minnesota River Valley, and dominates the city of New Ulm. The monument rests on an 18' octagonal stone base, 42' across, which has a public space within. Resting on top of the base, arranged in a circle, are ten 25' hollow cast-iron columns. Rising from the center of the room in the stone base, through its domed roof, and through the center of the circle of columns is a 70' hollow cast-iron column with an external ornamental iron spiral staircase, which leads to an observation deck at the top of the column. Atop the column is the 32' statue of Herman itself. The statue is constructed of sheet copper riveted to an iron framework, and depicts a warrior with flowing capes.

¹²⁵Branco Modenica, sculptor, interview with Matthew Kierstead, Birmingham, Alabama, 29 July 1993.

¹²⁶Thompson, 11.

¹²⁷"Bartholdi Fountain," Office of the Capitol Curator, Washington, D.C., October 1986.

Herman's right arm is extended upward, and holds aloft a sword.¹²⁸

The entire Herman Monument was modeled by Alfonz Pelzer of Salem, Ohio. Pelzer and his brother Hubert ran a sculpture business in New Salem, and Alfonz Pelzer is credited with a number of public statues of Abraham Lincoln. The Pelzer business was purchased by the William H. Mullins Company, who continued to create public sculpture. The Mullins Company also manufactured ornamental statuary, with a line of corrosion-resistant zinc statues. In their 1894 catalog, William H. Mullins offered a 9' zinc sheet Vulcan, for the price of \$50.00.¹²⁹

The City of Birmingham itself is worth considering as a context for colossal sculpture. Two other examples of the genre stand out on the city's horizon, both on downtown office buildings. Edward Field Samford's 1925 Lady Electra, atop the Alabama Power Building has already been mentioned for the romantic "relationship" she was said to have with Vulcan. Samford's Electra, like Vulcan, symbolizes a local industry, in this case, a state electrical utility company. Electra's iconographic scheme includes her shimmering gold skin, and the clusters of lightning bolts--symbolizing electrical energy--which she holds in her hands and wears in a wreath on her head.

A slightly larger Birmingham colossus is the 31', 20,000 pound bronze replica of the Statue of Liberty which was installed on top of the Liberty National Life Insurance building in 1958. Birmingham's Liberty, according to Liberty National who commissioned the statue, is the largest example of replica statuary in the U.S. In the case of Liberty, the final product was much smaller than the model, the reverse of the Vulcan project. Regardless, it took the artists four years to complete the molds and cast the statue. For the Liberty, like Vulcan, the creative roadblock was finding a foundry that would accept such a large task. A foundry in France accepted the job. The molds were shipped from America to the foundry, and the finished bronze sections shipped back to Birmingham. Birmingham's Liberty was placed on the roof of the Liberty National building on September 13, 1958, having cost \$100,000--roughly five times the cost of

¹²⁸United States Department of the Interior, National Park Service, National Register of Historic Places Inventory-Nomination form for the Herman Monument, Minnesota State Historic Preservation Office.

¹²⁹Fred Moffet, Professor of Art History, University of Tennessee, Knoxville, interview with Matthew Kierstead, via telephone, 13 September 1993.

Vulcan in 1904.¹³⁰

In addition to the context of heroic or colossal sculpture, Vulcan also fits into another, more unusual context, that of sculpture created to commemorate a specific branch of industry, in this case, metallurgy. Examples are few, as this genre more often takes the form of murals, mosaics, frescoes, and paintings. Sculptural examples do appear on Art Deco or Moderne skyscrapers of the 1920s and 1930s, particularly buildings with a corporate industrial, transportation, or public utility function. These figures are not always classically derived; toward the Depression they take on a more geometric, stylized appearance. In Birmingham, an example of this sits far below Birmingham's Lady Electra, where Edward Field Samford's larger-than-life sized sculptural personifications of Power, Light, and Heat stand over the entrance to the Alabama Power Building. These sculptures--as is generally the case--symbolize a servile force or process rather than a city, as does Vulcan. Thus, unlike these examples, Vulcan is heroic in the classical style, and is by far the largest known example of symbolic industrial sculpture.

The industrially-related American sculpture that shares the most similarities to Vulcan is the Henry Clay statue in Pottsville, Pennsylvania. The Henry Clay statue was created after the death of Clay in 1851. Henry Clay was an American financier and diplomat who in 1824 was responsible for instituting a protective tariff on foreign goods such as lead, hemp, glass, wool, cotton, and iron. Clay's tariff helped to spur the growth of the American iron industry, and by extension, the coal mining industry. The Schuylkill River valley in Pennsylvania particularly benefitted; the iron industry there burgeoned, using locally-mined anthracite coal. A movement to honor Clay grew, and at least one early iron blast furnace, near Morgantown, West Virginia, was named for him.

The community of Pottsville, in the Schuylkill valley, decided to erect a statue to honor Clay. The sculptor Herman Wesche, from

¹³⁰Information on the Liberty National Insurance Company's Liberty statue was taken from a press release, "Eight Million More to See Miss Liberty at New Location," 29 August 1988; and an information "Backgrounder," "Liberty National Life Insurance Company's 'Miss Liberty' Statue," August 1988. In 1988, only thirty years after the raising of Liberty, forces within Liberty National felt that the growing skyline of Birmingham was obscuring their symbol, and in a case of Vulcanian déjà vu, it was proposed to move Liberty to a nearby busy highway intersection, where the statue would be placed atop a streamlined marble tower in a landscaped park. This never came to pass.

Munich, Bavaria, created a 15' image of Clay, based on a French portrait of the man. A Robert Wood foundry cast the statue of Clay, using only Schuylkill valley anthracite-smelted pig iron. Clay is shown standing with his right hand extended from the waist, his palm flat, facing up. A 67' hollow sectional cast-iron column for the statue was cast, using local iron, at the Robert Chilson foundry. A 15'-square sandstone pedestal was constructed on a cliff at the edge of a hill with a commanding view of Pottsville. The column and statue, measuring eighty two feet when joined, were placed on the pedestal, and a small park was built at its base.¹³¹ The Henry Clay statue and the Vulcan statue share the distinction of commemorating or symbolizing figures or places important to the iron industry. In addition, both were cast from the iron of their respective industrial locations, are examples of colossal statuary, and were placed on pedestals in elevated parks overlooking the cities that created them.

In the context of Moretti's work, industrially-related sculpture played a minor role, with Vulcan being the obvious exception. Moretti was first and foremost a creator of monuments. Moretti's industrial works and commissions include a sketch for a symbolic work for Westinghouse Air Brake; a tiny, personal model, Spirit of Aviation; a similar Genius of Electricity; and a series of safety trophies for Carnegie Steel, National Tube, and the Youngstown Sheet and Tube company. The steel company trophies are unusual, as they combine fluid, heroic, cast, worker figures with precisely machined technological features such as molten metal ladles. Vulcan was not the only image that Moretti created to symbolize industrial Birmingham. The January 6, 1912 issue of The Survey, a national "Journal of Constructive Philanthropy", titled simply: "Birmingham", devoted much space to discussions of the city's growth, industry, and social condition. On the cover, clearly marked G. Moretti, is a medallion in the shape of a spoked gear with a male youth clad in a loincloth and holding a hammer, seated next to an anvil. There is no caption in the publication to indicate whether Moretti intended this as to be a personification of Birmingham, although, the relationship is implied. This image also appeared in a similar, larger symbolic industrial relief sculpture executed for the City of Pittsburgh.

Moretti's Vulcan can also be examined in the context of Expositions and World's fairs. Prior to the St. Louis Fair, Moretti had been involved in the sculptural program of the 1897 Tennessee Centennial. Moretti's role is not known, but his participation was praised by Fair authorities. This experience

¹³¹Leo Ward, author of: Henry Clay Monument, 1852-1985, telephone interview with Matthew Kierstead, Pottsville, Pennsylvania, 13 September 1993.

placed Moretti in an environment where many classical and heroic sculptures were being created in a short period of time. This experience certainly helped prepared Moretti for the Vulcan project. One feature of the Tennessee Centennial was a reconstruction of the Acropolis, complete with pediment sculpture. This project was not given to Moretti, but to George J. Zolnay. Inside the east pediment, which historically portrayed the Birth of Athena, Zolnay sculpted a figure of Vulcan, who according to myth, brought Athena forth by striking Zeus on the head with an axe.¹³²

The Exposition which had the greatest impact on American architecture and sculpture was the Chicago World's Columbian Exposition in 1893, held to commemorate the 400th anniversary of the European discovery of America. The impact of McKim, Mead, and White's neoclassical "White City" was far-reaching, and essentially put an end to Victorian revival styles and the Richardsonian Romanesque in public architecture. The 1893 Chicago Exposition fomented a renaissance in American sculpture, and launched or bolstered the careers of many great American sculptors, including Daniel Chester French, Augustus Saint Gaudens, Gutzon Borglum, and Cyrus Dallin, all of whom worked in the colossal mode. Participation in a Fair or Exposition, like creating a colossal sculpture, was a valuable career move for a sculptor like Moretti.

The sculpture program at the 1893 World's Columbian Exposition was far too extensive to analyze here, but two works are relevant to Vulcan's context. The first is Daniel Chester French's 65' gold-leafed Statue of the Republic, a heroic female colossus that stood on a tall pedestal at the end of a great lagoon, surrounded by the "White City". Although this statue was destroyed at the end of the fair, it briefly held Vulcan's distinction as the second tallest statue in America. An even more unusual Chicago World's Fair precedent for Birmingham's Vulcan is the 15' bronze and copper statue of Tubal-Cain, the biblical blacksmith and equivalent to the mythical Roman Vulcan. Tubal-Cain, like Vulcan at St. Louis, was the metallurgical figure that presided over the Chicago Fair's Mines and Mining Building.¹³³

¹³²John Schnorrenberg, interview with Matthew Kierstead, Birmingham, Alabama, 14 September 1993.

¹³³James L. Riedy, Chicago Sculpture (Urbana, Ill: University of Illinois Press, 1981).

ARTISTIC AND STRUCTURAL EVALUATION

Birmingham's Vulcan is reputedly the largest cast iron sculpture in the world. Vulcan stands 55' feet tall from toe to upraised speartip, and weighs sixty tons, or 120,000 pounds. Some accounts claim that Vulcan is shown at the moment of the discovery of iron, or ironmaking; however, this is not supported by mythological literature (or the fact that he holds an iron hammer on an iron anvil). Giuseppi Moretti simply depicted Vulcan at work, in the act of creating an object. Vulcan was originally shown standing by his anvil, hammer in hand, holding aloft a forged speartip to check if it was straight, or true. Vulcan stands, his legs slightly apart, with his feet turned slightly outward, a natural, supportive position for a figure engaged in heavy work. Vulcan's feet are shod with heavy sandals, and his muscled calves are clad in thick, crisscrossing sandal straps that end, with bows, at the kneecaps. Beneath his heavy leather blacksmith's apron, equipped with straps and buckles, his torso twists to the left, so that his shoulders are at a slight angle to his feet. The top of his apron is open, exposing his upper chest; his buttocks are likewise exposed. Vulcan's head is raised, and he gazes along his right arm to his hand, in which he delicately holds a freshly-forged triangular spearhead with a short shaft. Directly behind Vulcan's left leg is a square-hewn tree trunk upon which rests his anvil. Vulcan holds his left arm bent, out from his side, and in his hand he grips the handle of his hammer, the head of which rests across the top of the anvil. Vulcan's visage is alert, aggressive and proud. Vulcan's hair is wavy, and cut short over the ears, and his beard and mustache are full and curly. Vulcan's eyes are wide as if intent on his work, and his thick eyebrows are slightly raised, adding to the intensity of his expression. Vulcan appears well-muscled over his whole body, and there is no evidence of any obvious intent to depict Vulcan as disfigured or lame.

Moretti's Vulcan was created in the tradition of classical Greek and Roman heroic sculpture in terms of composition, modelling, and expression.¹³⁴ Vulcan resembles heroic or narrative sculpture of the Hellenic phase of Greek sculpture, which was characterized by exaggerated features and highly developed musculature, and an

¹³⁴Moretti attributed his success, and the popularity of heroic monuments in general, to the impact of World War I. "Before the War, we were forced to make portraits. There was little demand for monuments. Now the heroic spirit pervades everything and the true artists may do their best work without fear of running out of vehicles for its expression." undocumented newspaper clipping, Moretti papers, Linn-Henley Research Library, Birmingham Public Library.

animated and sometimes even grotesque appearance, the most familiar and powerful example being the marble Laocoon, which depicts a father and his sons fighting a giant snake. Vulcan shares some similarities with this type of work, including mythical content.

Vulcan is much closer in appearance, however, to sculptural images of Roman Emperors or centurions, such as the Hellenic Augustus of Prima Porta, ca. 20 B.C., or the later Roman Augustus Polyclyta. These works are typical of the genre of Hellenic and Roman heroic sculpture, which were intended to imbue their subjects with a sense of authority and power. Usually the pose of the subject is contraposto, with the weight of the body borne by one straight leg, and the other leg slightly bent. A corresponding tilting of the shoulders is usually present. In the case of Imperial works, the figure is usually dressed in impressive battle gear, or a flowing toga, and bears symbols of authority such as a staff or scroll in one hand, and a wreath of olive leaves for a crown. The most important part of the iconography of authority is the raised arm, which is usually shown in an oratory or pontifical configuration. Often there are few or no other images of the subject other than the statue itself, and comparison of various heroic Greek and Roman statues indicates a degree of idealization of both physique and physiognomy in the genre. Facial expression is minimal, and typically displays an impassive strength.

Vulcan certainly fits into the genre of Hellenistic and Roman heroic sculpture, with some minor differences. Vulcan is not shown in a contraposto pose. Instead, he is more solid and flat-footed. He is shown in a pose more anatomically appropriate for one engaged in heavy labor--rather than the more relaxed contraposto of the Imperial sculpture--a choice more in keeping with Vulcan's role as worker-god symbol of an industrial city. Vulcan's musculature is impressive, and his upraised right arm echoes the authoritarian gestures of the statues of the Roman emperors. Again, the theme was adapted to a pose typical of the process of the blacksmith--examining the straightness of the work in the light. Moretti simply exchanged the toga for a leather apron and the staff for a hammer in order to equip his figure with the mythical appurtenances appropriate to the new iconography. The body and the face are not of the ideal heroic appearance or proportions. Vulcan's visage is ruggedly handsome, with an expression of confidence and concentration. Vulcan's body is thickset with short legs and weight concentrated above the hips.

Moretti certainly drew on the Greek and Roman heroic sculptural ideal as a general model for the Vulcan statue, but he also had to draw on more specific sources--literary descriptions, and

previous artistic examples of Vulcan, and Greek predecessor, Hephaestus. The contents of the Vulcan myth have been outlined above, although Vulcan's deformity, or lameness is an important part of the discussion of Moretti's choices for depicting Vulcan. The term lameness implies an infirmity of the legs; it was also said of Vulcan that his arms and chest became powerful through his metallurgical labors.

Surviving classical depictions of Vulcan and the Vulcan myth are unfortunately scarce. The east pediment of the Parthenon on the Acropolis in Athens, Greece, contained an unusual mythological scene carved by Phidias in marble, The Birth of Athena, who sprang from Zeus's head after being struck by Vulcan's axe. Most of this scene was destroyed long ago, and reconstructions of the sculptures are based on verbal accounts and a depiction of the event found on a Roman well head in Madrid. This image of Vulcan is unlike Moretti's; the god is a finely muscled, slender figure, bearing an axe, in a contraposto pose. Several other images of Vulcan appear on vase paintings, and share a similar lack of characteristic features.

It is reasonable to assume that as Moretti was classically trained in Italian art centers such as Carrara, and travelled to several European countries, he was in contact with much classical art, and was well-versed in the written documentation of the works of antiquity. Art history had not yet developed as a discipline. It is not possible to identify the literature that Moretti consulted, or to review it, as it would be in Italian. Likewise, one cannot say with any certainty what, if any books written in English were consulted by Moretti, as his poor English was noted as a handicap when he first came to America. Several turn-of-the-century artists' sourcebooks on Greek and Roman sculpture do, however, mention Vulcan.

The first source, although fairly basic, lays out the characteristic features and appearance of Hephaestus, the Greek precursor to the Roman Vulcan. The source, the 1910 Encyclopedia Britannica, states that from archaic Greek times, Hephaestus was traditionally depicted with a long curly beard, clothed in a short sleeveless tunic, and a round, close-fitting cap. He is shown with the face of a middle-aged man, with unkempt hair. He is usually used to symbolize a greek craftsman, and is often depicted with a hammer, and sometimes pincers. More significantly, "In art, no attempt was made, as a rule, to indicate the lameness of Hephaestus; but one sculptor, Alcamenes, is said to have suggested the deformity without spoiling the

statue."¹³⁵

Another description of the Alcamenes Vulcan describes it thus: "Standing on both feet, and with the help of the drapery, his lameness was slightly indicated, yet not so as to give the impression of deformity."¹³⁶ And finally, from an ancient description: "We admire the Hephaestus made by Alcamenes at Athens, in whom, although he is standing upright, and clothed, lameness is slightly indicated in a manner not displeasing to the eye."¹³⁷ Considering the ambiguous appearance of Vulcan, it would appear that the Alcamenes Vulcan, or at least a work or works influenced by or similar to it, may have served as a model for Moretti. Indeed, a bronze Vulcan fitting the Alcamenes description appears in the collection at the British Museum in London. The figure is stocky, with unkempt hair and a thick curly beard. This Vulcan statue wears a rough tunic, with one shoulder exposed, and the legs appear too short for the large, powerful upper body.¹³⁸

The Birmingham Vulcan's upper body, and his head in particular, appear disproportionately large from many vantage points. This phenomenon is possibly a result of technical and temporal constraints in the modeling and casting process, and/or overcompensation for anticipated perspective distortion by the sculptor. Although the St. Louis Exposition was a temporary event, the Vulcan commission was important to Giuseppe Moretti, as it was a highly visible showcase for his work, and an opportunity to create a colossus. Considering Moretti's classical training, it is likely that he employed perspective techniques which have been employed in the creation of public statuary since classical times. Classical sculptors developed a sophisticated, subtle method of enlarging the upper portion of their sculptural figures in order to compensate for perspective distortions which would be experienced by the viewer at close range. Moretti knew that his sculpture would be viewed indoors, at close range. It is therefore reasonable to assume that he employed a compensatory

¹³⁵Encyclopedia Britannica, Eleventh edition, Volume 13, Cambridge: University Press, 1910. p.305.

¹³⁶Gardiner, Ernest Arthur. A Handbook of Greek Sculpture, New York: McMillan, 1896. p.309.

¹³⁷Stuart H. Jones, Selections from Ancient Writers Illustrating the History of Greek Sculpture (Chicago: Argonaut, 1966 (originally published in 1895), 102.

¹³⁸Encyclopedia Italiana, di Science, Lettere, and Arti, (Rome: Fondata da Giovani Treccani, 1950), 516.

enlargement of the upper torso and arms in an effort to create the appearance of a well-proportioned figure to the Exposition viewers, most of whom viewed Vulcan literally at his feet, where visual distortion was most severe. Indeed, an account of the casting of the head states that it was made 2-1/2' larger in all dimensions in order to give "the colossus an appearance of symmetry from the levels from which he will be viewed." However, the account goes on to say, this method was "seldom practiced on such a large model as in this instance."¹³⁹ It is also true that Moretti did not have the time or facilities to properly view the entire, assembled Vulcan figure during the process of making the full-sized molds from the 8' plaster model.

Considering Vulcan's questionable proportions, it is possible that Moretti overcompensated for the anticipated distortion. Unlike the large, final cast iron Vulcan, the preparatory plaster model appears well-proportioned from a full frontal view, and is a far more sensitively-modeled figure. The appearance of the preparatory model, which was a plan of intent to show the client what the finished product would look like, is markedly different, however, from the final Vulcan, with its short legs, stocky torso, and enlarged head. It is unlikely that Moretti intended to make Vulcan misshapen all along, and made a more handsome model to fool his clients; this would have outraged the Commercial Club and risked his career. The more likely possibility is that something went wrong in the pattern-making process, when the components were being scaled up, a process supervised by Moretti.

As a result of possible overcompensation for perspective distortion, the Vulcan statue straddles a technical, and therefore visual borderline. If Moretti intended to create a ruggedly handsome figure with some adherence to historical precedent, he succeeded admirably. If Moretti intended to make Vulcan's upper body larger for purely technical reasons, it would appear that he made it too large. Considering the degree of distortion, this seems an unlikely, and unfortunate accident for a professional with experience in public statuary such as Moretti. In the surviving photographs of Vulcan at the Exposition, and from some locations on the ground at Vulcan Park, the statue does not appear badly distorted, but at best, Vulcan does appear thickset, or overly muscular in the upper body. At a close distance, where the viewing angle is shallower, this ambiguity is more resolved. In photographs and views where Vulcan is seen at a distance, the distortion of the upper body is pronounced, and from certain low angles, even grotesque and dwarf-like. At best, his right arm appears too long, and his head

¹³⁹"No Hotel for the Iron Man," Birmingham Age-Herald, 17 April 1904.

appears unusually large from most common viewing angles, and even from the steep angles afforded at Vulcan Park.

The ambiguous nature of Vulcan's appearance is likely the reason for the varying opinions regarding Moretti's ultimate depiction of Vulcan. Vulcan's alleged disfigurement is often referred to as a lameness, yet Vulcan's legs are shapely, muscular, and in proportion to each other and his lower body. If anything, Vulcan appears to suffer from dwarfism, a syndrome that affects the proportions of the upper and lower parts of the body, rather than any other more obvious lameness or deformity. This certainly reflects the mythological explanation for Vulcan--he was weak in the legs, and became overdeveloped in his arms and torso. Ultimately, the appearance of the Vulcan statue is ambiguous--it appears ill-proportioned, but not intentionally unattractive, which supports the argument for the handsome, yet historically correct depiction.

Ultimately, the client was satisfied, judging from the statue's reception and the rhetoric of the day. If there were indeed any arguments between Moretti and the Commercial Club over the suitability of an "ugly Vulcan" versus a "handsome Hermes" to accurately symbolize the Birmingham district, Moretti made the best choice, and his clients realized it. The tousled, bearded, stocky, creature was a far more appropriate personification of the young, dirty, brash, industrial city than some other lithe, fleet-footed deity. Fred Jackson, Commercial Club president said of Vulcan's appearance: "Mr. Moretti, who was a sculptor of renown, did not design this Vulcan to be a statue of artistic beauty, but rather to represent the marvelous mineral resources of our district and to inspire the youth of our land with its possibilities."¹⁴⁰ Unfortunately, Birmingham's turn-of-the-century art elite considered Vulcan a "monstrosity", and groups such as the Daughters of the Confederacy did not want "indecent" Vulcan, with his exposed derriere, in Capitol Park (now Linn Park), compromising the fountains and proper statuary of Victorian Birmingham. Objections such as these contributed to the confusion over the statue's disposition upon its return to Birmingham.¹⁴¹

Comparison of Moretti's 8' plaster model of Vulcan with the finished, full-size cast-iron version demonstrates the overall success of the final casting. Under Moretti's supervision, skilled foundry pattern makers had to build an enlarged version

¹⁴⁰Fred M. Jackson, "Vulcan", in "Voice of the People", Editorial page, Birmingham News, 19 August 1935.

¹⁴¹Rowell, 34-38.

of the plaster model, in sections small enough to be individually cast. In terms of the translation of the articulation of the various surface textures, particularly the face and beard, the full-size iron casting appears to have been fairly successful. The face is quite similar in appearance and expression. Subtle detail was lost in the scaling up of the figure, and in the casting process, giving the finished Vulcan a slightly cruder appearance. The hair and beard appear noticeably more generalized on the finished casting than on the small, and full-size plaster models. Vulcan's elaborate curly beard could not be cast as intended due to the technical difficulty of casting the cutbacks, or protruding curved details, which would have consumed too much time. The right arm, cast from new molds by the Beggs foundry, appears indistinguishable from the original McWane castings.

To properly balance the statue, and to prevent it from breaking under its own weight, the individual sections were made roughly 3" thick at the bottom of the figure, in the legs and waist, and were cast thinner toward the top, in the chest, head, and arms, where the thickness of the casting tapers off to 2" or less. This scheme is not particularly consistent overall, but the average thickness does decrease with elevation. Vulcan was cast with a large round opening at the top of his head in order to conserve weight, as the top of his head is not visible. This opening has been covered with a metal hatchway. Vulcan is described as being cast in seventeen sections, but when the individual fingers and thumb of the right hand are included, the number of separate castings for the body comes to twenty-two, and the hammers, anvil, base, and speartip add another seven components. The sections were cast with continuous overlapping flanges at the edges of the joints, or "bell and spigot" type joints. These flanged joints are visible in the views of the disassembled Vulcan on Red Mountain (figure 23). The mating surfaces of the joints were painted a dark shade in order to reduce their visibility, and grouted with a non-structural material to smooth over the rough joints.

The joint flanges were employed to properly locate the pieces, and to provide lateral, or shear strength, at the joints. In addition to the flanges, bolts were also employed to hold Vulcan's joints together. Holes were variously cast into the flanges, or drilled through them after casting. These bolts, which are backed up by plates or large washers to distribute stress, hold the joints together by compression. The structural supports at the joints on the right and left hands are more elaborate. Protruding tabs or lugs were cast into the inside edges of the wrist joints, and joined with bolts. On the right hand, angle iron tabs bolted to the inside of the joint substituted for cast iron lugs, as the proper holes and lugs were left out in haste during casting. The fingers of the right hand

are connected to the hand with internal 1" x 4" steel straps bolted to the cast iron. The hand is connected to the wrist in a similar fashion. Several of the hand and arm joints are misaligned.

The upraised right arm is supported internally by a long, 1" x 4" sectional steel strap that is bolted to the length of the inner surface of the upper arm. The strap system may have been added at a later date, possibly at the time of the Red Mountain installation, to strengthen the arms and to prevent the loss of digits and limbs which plagued the statue while at the State Fair Grounds. Vulcan was traditionally assembled using a scaffold, and It is likely that with the installation of the straps, the arm was actually supported by a scaffold during assembly so that it would not support its own weight until the internal straps were bolted in place and the scaffold was removed.

Classical sculptures carved from marble (like cast iron, a brittle and homogeneous material) often employed compositional elements such as tree trunks as disguised braces for more technically daring arrangements of the figure's limbs. The brace between Vulcan's left wrist and hip, however, is not original, nor is it a structural foil. As designed by Moretti, the hammer handle supported the weight of the left arm, and the brace was installed later when the anvil block was moved from Vulcan's side to behind his leg so that he would fit on the narrow pedestal. This brace consists of a threaded tension rod which is bolted to the opposite cast iron sections, surrounded by a non-load bearing, cosmetic pipe sheath.¹⁴²

PHYSICAL AND HISTORICAL INTEGRITY

The various modifications and re-erections of Vulcan have resulted in damage to his physical integrity. Vulcan's greatest environmental enemy is corrosion. Cast iron, with its high silica content, is more rust-resistant than other ferric compounds; however, Vulcan is exposed to more water than anticipated by his designer. Rain water enters Vulcan through his head, and various holes cut into his body for access to lighting equipment. The lead and fiber caulk in the joints between his various parts has not been maintained, admitting still more water to his interior. Compounding this problem is the manner in which Vulcan was

¹⁴²Edward Beck, et al., "Statue of Vulcan--Report of Phase I Studies" (Birmingham, AL: Law Engineering Industrial Services, 1992), n.p.

This report, (and phase II) were used for the technical details in this section.

mounted to his pedestal. Both feet and the anvil stand were drilled, threaded, bolted with angle clips, and anchored to the concrete base. Two 4-1/2" wide, 10' long steel reinforcing rods were run through the soles of each of Vulcan's feet and up into the hollow spaces inside his legs. Vulcan was filled with concrete to the center of his chest in order to ballast him, and bond him to the reinforcing rods. The anvil was anchored in a similar manner, resulting in a large hole in the top of the anvil where the concrete was poured. This engineering feature, an attempt to ballast the sculpture against high winds, has proven highly detrimental to Vulcan. In the winter, water collects between the cast iron shell and the concrete core. When the water freezes, it expands, causing the cast iron to crack. Cast iron and concrete have differing rates of contraction and expansion, which may also add to the cracking problem, particularly at times of rapid temperature change, such as at sunrise. Drains installed in the concrete are inadequate and prone to clogging. The cracks weaken the structure, and white calcium carbonate stains from cement leaching through the cracks have discolored Vulcan's exterior, and have actually built up in layers several inches thick in places. According to a report by Law Engineering Industrial Services, corrosion has reduced the section thickness of internal supporting features, which requires in situ treatment or replacement of those members, and several of the flanges and bolts that hold the cast sections together are cracked, missing, or weakened by corrosion. Vulcan's exterior, currently in red primer, is in need of stripping, proper surface preparation, and weatherproof painting.¹⁴³

The incorrect assembly of Vulcan's arms is often mentioned as one of the indignities he suffered during his tenure at the State fairgrounds. When Vulcan was placed atop his pedestal on Red Mountain, however, he was not reassembled as Moretti had intended. In order to fit Vulcan's anvil on the pedestal, it was swung from its original position at his left side, to a location behind his left leg. In order to make this modification, Vulcan's hammer had to be attached to his hand at a more acute angle. The hole at the heel of Vulcan's palm had to be cut to a new radius, and the hammer withdrawn from his grip so that the end of the handle no longer protruded from his hand. This modification apparently weakened the statue, for a brace was installed between

¹⁴³Ibid.

The Law reports are short on history, and long on recommendations. Their value to this report was physical description of internal and other engineering features.

Vulcan's waist and his wrist.¹⁴⁴ Vulcan's anvil and stand were turned 180 degrees from its original configuration in order to hide the bare rectangle where the "Vulcan's Prophecy" plaque was bolted. The anvil base was also shortened by the elimination of the smooth band that separated the top and bottom halves. This was likely done to reduce the angle between the hammer handle and the anvil. Vulcan's hammer head was likewise installed in a position 180 degrees from its St. Louis configuration, and the second, lost hammer was not incorporated in the Red Mountain design. Due to the changes in the configuration of his left arm, Vulcan's wrist joint is clearly misaligned.

Vulcan was conceived and created as a temporary spectacle for a transitory event, the Louisiana Purchase Centennial Exposition. The statue was intended to be an elaborate advertisement for the products of the Birmingham District, and as a symbol of its growing industrial might. After the Exposition was over, several cities wanted to purchase Vulcan from Birmingham (buying and trading of exhibits after such events was not uncommon). Despite the fact that the Commercial Club could have made a profit on Vulcan had they sold him, Vulcan was retained and returned to his place of origin. Although his erection on Red Mountain was discussed at the time of his return, his subsequent history indicates that his location became the object of controversy, and he became somewhat of a "white elephant".

In a sense, Vulcan can be viewed as having been "out of context", and therefore having lost his historical integrity, ever since his departure from St. Louis. His checkered career of benign neglect and cycles of questionable attention after the Exposition certainly support this statement. But Vulcan's historical context has continued to evolve with the changes in his physical context, and this evolution must be considered.

Vulcan's long tenure at the State Fair Grounds receives little attention in most popular accounts of his career, although he served a apparent role as a social fixture for Depression-era Birmingham. The 55'-tall Vulcan was certainly impressive when erected in the Palace of Mines and Metallurgy as it was the largest object in the room, towering over all of the other exhibits. If nothing else, Vulcan impressed by his sheer volume inside a closed space. When Vulcan was placed on the ground in the flat, open air of the State Fairgrounds, however, his scale and visual impact were greatly altered and diminished. Not only was the viewer's visual impression of Vulcan affected, so was the attitude toward him. Once at the Fairgrounds, Vulcan was no

¹⁴⁴Branco Modenica, interview with Matthew Kierstead, 29 July 1993.

longer the bold spokesman for Birmingham industry that he was at the Louisiana Purchase Exhibition. The awkwardly-reassembled Vulcan became a familiar member of the community, and his familiarity did not come without a degree of contempt, as is evidenced by the indignities he suffered at the hands of advertisers, and the circulation of his "escapades" in newspaper cartoons.

When Vulcan was quite literally "placed on a pedestal" in 1939, his relationship to the viewer, and to the people of Birmingham, changed dramatically. Vulcan's relocation to Red Mountain--like his creation for the Louisiana Purchase Exposition--was developed by a local civic organization and was intended for promotional ends. The goal of the Exchange Club, and Birmingham Kiwanis, was to create an area attraction, and in the process, restore dignity to the Vulcan statue. Once assembled on the mountain, the dynamics of Vulcan's visibility were reversed. He became visible to many thousands of people at a glance, but he was high in the air, no longer a physically accessible character. Once Vulcan's overall visibility was increased, and his dignity apparently restored, the image of Vulcan became more strongly associated with the city of Birmingham.

Furthermore, Vulcan's eventual erection on Red Mountain was supported by rhetoric which noted the appropriateness of his location atop the ore deposits from which he was made, and his location overlooking his industrial birthplace. The literal and figurative elevation of Vulcan to this spot can be seen as a desirable, natural eventuality. Vulcan has been located on Red Mountain for more than half of his existence, and those who remember him from the fair grounds are in the minority. For the majority of people in Birmingham, Vulcan's physical context has always been Vulcan Park, on Red Mountain.

However, the visual aesthetics of the Vulcan statue have been altered by the relocation to the tower on Red Mountain. By extension, the historical integrity of the statue has also been compromised through this move. When the original intent and location for Vulcan are considered--particularly in the light of the distortions cast into the statue, be they intentional, or even overcompensatory--the pedestal location appears a less than optimum one for Vulcan. From an aesthetic viewpoint, Vulcan's relocation to a position where he is visible from a shallow angle is unfortunate, as it aggravates the distortion inherent in his upper body when viewed from a distance.

Vulcan's physical and historical integrity have been further affected by physical modifications to the statue. An ongoing issue is Vulcan's paint scheme. At the Louisiana Exposition,

Vulcan was painted a neutral grey tone. His advertising stint at the Fairgrounds, and the attendant familiarity issues, placed the choice of Vulcan's paint schemes in the public domain. Vulcan has endured solid coats of several colors since he was placed on Red Mountain. Historically, classical sculpture was painted in a bright, naturalistic manner. It is unlikely that the classically-trained Moretti would have preferred a naturalistic scheme for his Vulcan, for his work in marble shared the pure, white finish preferred by nineteenth-century neoclassical sculptors. The closest Vulcan came to a naturalistic paint scheme was his debut on Red Mountain, but his detailed paint scheme was the result of his being painted on the ground, prior to assembly, a task now prohibitive due to the exposed position of the statue.

A dramatic historic and physical compromise to Vulcan was the 1946 installation of the traffic safety torch by the Birmingham Jaycees. Vulcan was originally portrayed in the act of checking the straightness of the speartip he was forging, and the torch has obscured this narrative element of the statue (figure #24). Large holes were cut into the cover at the top of Vulcan's head, his shoulder, and arms to mount nighttime illumination, and external wires and numerous service handrails added visual clutter to Vulcan's appearance. The original square-shanked, arrow-shaped speartip was lost at the fairgrounds, and replaced with a flattened, triangular speartip with a shorter, cylindrical shaft, now obscured by the torch. The replacement speartip was mounted at a new angle, where the shaft was still held between thumb and forefinger, but penetrated the palm, instead of resting along the top of the hand.¹⁴⁵

Thus, the installation of the Jaycees "Light for Life" traffic safety torch was an ironic event, for it thrust Vulcan into national publicity due to the success of the Jaycees traffic safety campaign. It is likely that this event made Vulcan known to far more people than the 19 million who saw him at the St. Louis Exposition. The historic symbolism of Vulcan was little-known outside the region, and the campaign may have made Vulcan a new destination for tourism. However, Vulcan's symbolism has been compromised, for he is now seen as a nocturnal torchbearer, warning of life or death on Birmingham's streets (indicated by

¹⁴⁵According to Birmingham News, 7 March 1968, "Park Board Eyes Vulcan Park Facelifting," architects Elliot and Bradford had proposed, in a rendering of the new park design, to sheathe the tower in a brown stone, rather than white marble. The firm also proposed that the traffic safety torch be replaced with a gas torch. Although this is no better than the "Light of Life," their proposal to place the red and green beacon with a neon strip at Vulcan's feet is a concept worth reconsidering.

the color of his torch). At the present time, the red bulbs in the torch do not even operate--the torch itself does not even perform its intended function. The longevity and pervasiveness of the image of the torch is similar to that of the park itself--it is treated as if it has always been there. As often as not, advertising imagery which uses the profile of Vulcan, and even the decals on the doors of City of Birmingham vehicles, will include the torch instead of the speartip in Vulcan's upraised right hand, looking like an amorphous popsicle (figure 25).

Development along the ridge of Red Mountain in the immediate area of Vulcan Park has further compromised the integrity of the site. Private homes and clubs dot the top of the ridge, and four tall and two short radio and television transmission towers immediately to the west of Vulcan Park dwarf the statue on its pedestal (figure 26). The impact of the towers on Vulcan is even more dramatic at night. When seen from a distance, the blinking red and white aircraft warning lights on the towers render the low green glow of Vulcan's safety torch insignificant by comparison. Vulcan's torch has been in place for so long, that it has become a part of Vulcan's local imagery, and perhaps even a part of its history. Removal of the torch may require far more political than physical effort.

To the city of Birmingham, Vulcan, and Vulcan Park appear to have been considered mutable elements, subject to alteration to satisfy cycles of civic promotion. In a sense, though, that is just what Vulcan was created for. Sculptor Giuseppe Moretti lamented what he considered Vulcan's fall from grace after the St. Louis Exposition. Many others appear to take Vulcan quite seriously, and agree with this point of view. It is entirely likely, however, that Messrs. Jackson, MacKnight, and company from the Birmingham Commercial Club have not been turning in their graves over Vulcan's condition, but instead heartily approve of Vulcan's ongoing utility and incorporation in city promotional schemes.

A move is afoot to restore the Vulcan statue, and renovate Vulcan Park. Vulcan Park is also currently under consideration as a visitors center and interpretive facility by the proponents of a Birmingham industrial heritage project--another attempt to place Vulcan at the center of, and make Vulcan Park the site of, regional tourism. Considering the potential for interpreting the economic geography of the district, the view of Birmingham from Vulcan Park help one to understand the dynamics of the District. Hopefully the renovation of the park will sensitively reflect not only historic shapes, colors, textures, and materials, but the visual and physical accessibility, and the history and symbolism of the Vulcan statue, and Vulcan Park, as originally conceived.

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LIST OF FIGURES

Figures are from the photograph collection, Linn-Henley Research Library, Birmingham Public Library, unless otherwise noted.

1. Giuseppe Moretti, ca. 1904, with small maquette of the Vulcan statue.
2. Eight foot clay and plaster model of Vulcan. Inscription is written on the original photograph. This is the model that appeared in the Birmingham newspapers; it is assumed to be the model that Moretti showed James MacKnight, and which was displayed in the Birmingham Commercial Club. Other models of Vulcan existed, including a cruder life-size version, with anvil stand more like the tree trunks from which they were made, and with pincers and hammers leaning on it, another historical iconographic feature.
3. Head of Christ, Giuseppe Moretti, 1904. Sylacauga (Alabama) marble, Life size, location: Alabama Department of Archives.
4. Patternmakers posing with Moretti (dark suit, in center) in Passaic, New Jersey church where patterns were made.
5. Passaic; pattern from feet to waist, before cut into sections.
6. Sectional pattern being erected in Birmingham Steel and Iron Company yard.
7. Vulcan's head before assembly on Red Mountain. Mold lines are clearly visible.
8. Palace of Mines and Metallurgy, St. Louis Centennial Exposition. Photographic Views of the Universal Exposition, Introduction by Walter B. Stephens, St. Louis: N.D. Thompson Publishing Company, 1903.
9. Vulcan at St. Louis, in the Palace of Mines and Metallurgy. Source unknown, but this image appears to be a version of a photograph that also appears in Bennitt, Mark, History of the Louisiana Purchase Exposition, St. Louis: Universal Exposition Publishing Company, 1905. p. 343.
10. Vulcan at St. Louis. Source unknown. Note two hammers, "Prophecy" plaque.
11. Vulcan at Alabama State Fairgrounds, Birmingham, Alabama. Note reversed right hand, and anvil to the rear, rather than at the side.

12. Vulcan at the Fairgrounds. Note ice cream cone in left hand.
13. Vulcan at Fairgrounds.
14. A synopsis of the Depression-era Vulcan cartoon series. Birmingham Age-Herald, 1939.
15. Vulcan Park pedestal under construction. Note concrete frame construction at base of pedestal.
16. Vulcan lying in pieces at Vulcan Park, prior to assembly. Note figures for scale.
17. Vulcan's leg and hoisting crew, November 1937. Man in white coat, incorrectly referred to as Moretti in several sources, is former Birmingham Mayor Jimmy Jones.
18. Vulcan atop the pedestal, with 'Light of Life' traffic safety torch.
19. View of Birmingham from Vulcan Park overlook.
20. View of Vulcan Park from adjacent transmission tower, taken with telephoto lens to make downtown Birmingham appear closer than it is. Photo was taken after 1946.
21. Aerial photograph from approximately the same position as No. 20, but at an earlier date. Smoky industry in the distance at right is the Sloss City Furnaces, where the pig iron that went into Vulcan was made.
22. Entrance to old Vulcan Park pedestal. Wrought iron gates honor J. Mercer Barnett, Birmingham Kiwanian who assisted with the creation of the park. Gates can be seen at the Birmingham Kiwanis offices, Harbert Center, Fourth Avenue, Birmingham. From Birmingham's Vulcan, a 1938 Vulcan Park Promotional pamphlet published by the Birmingham Kiwanis.
23. Vulcan in pieces on Red Mountain, prior to assembly.
24. Vulcan on pedestal soon after installation. Note speartip in right hand.
25. Vulcan copy. Note that the traffic safety torch, and not the original speartip, has been carried over to this copy of Birmingham's iron man.
26. Vulcan and radio towers. The present transmission towers are far higher than those in this pre-1970 view.

Figure #1



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Figure #2



Figure #3

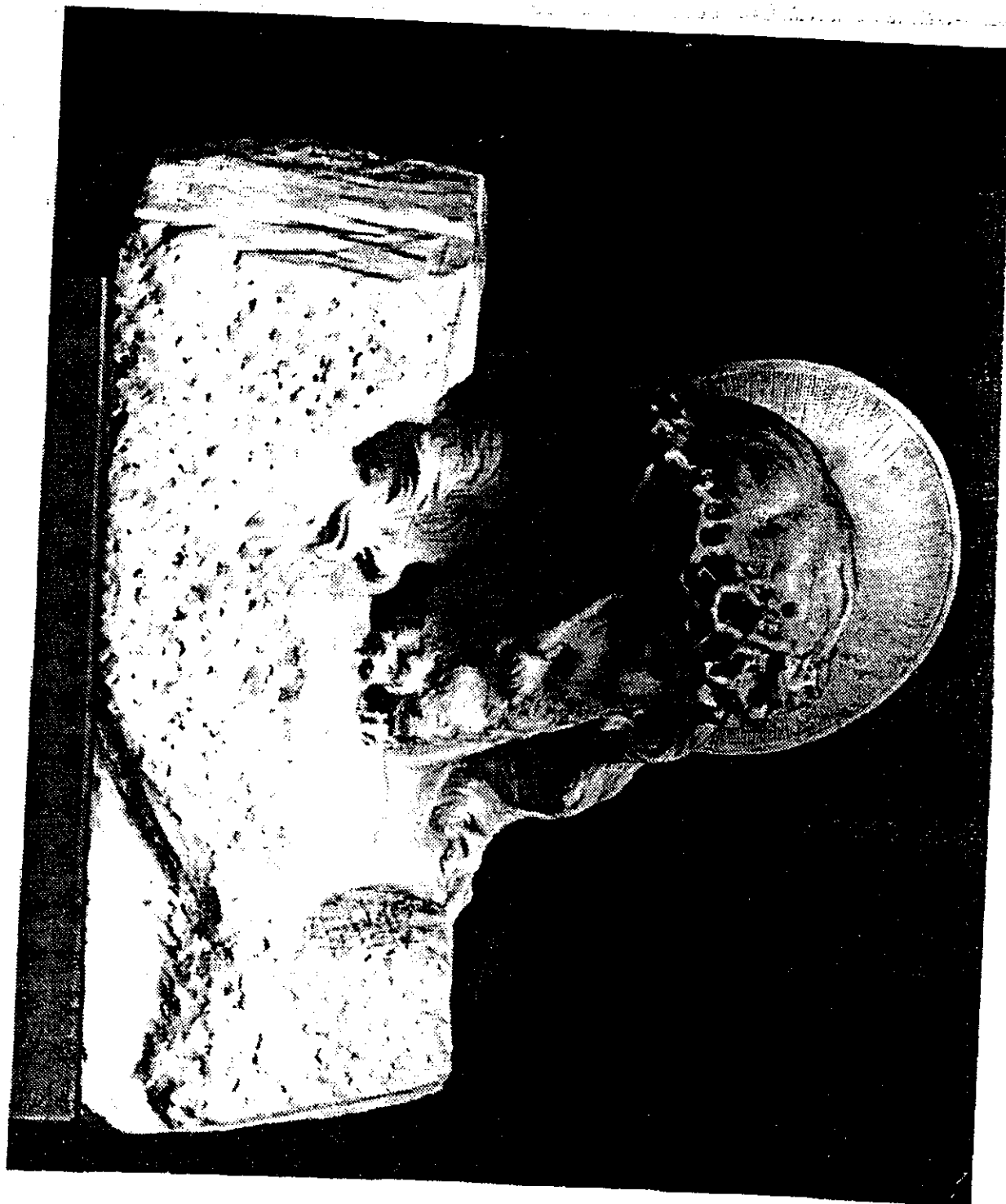


Figure #4



Figure #5

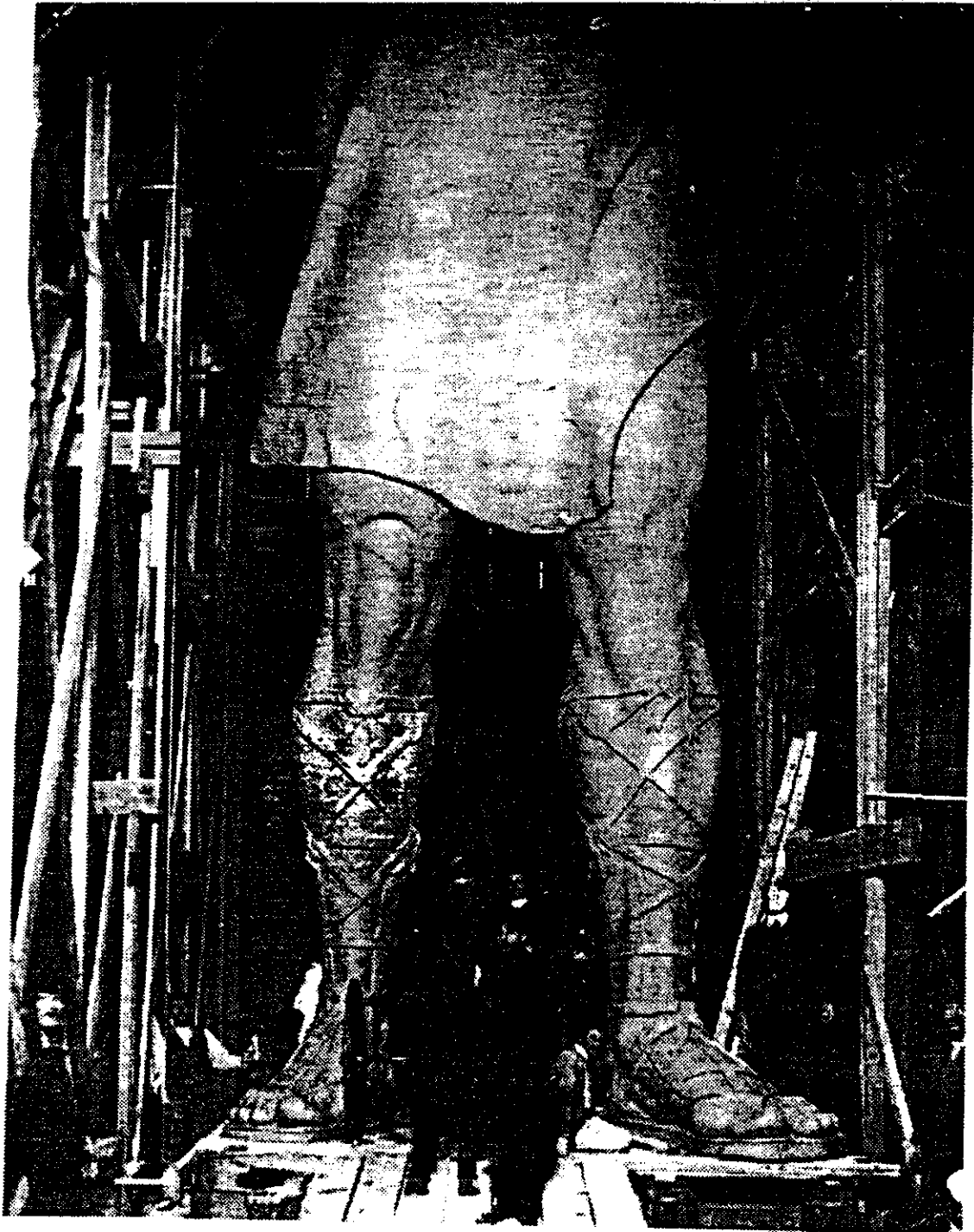
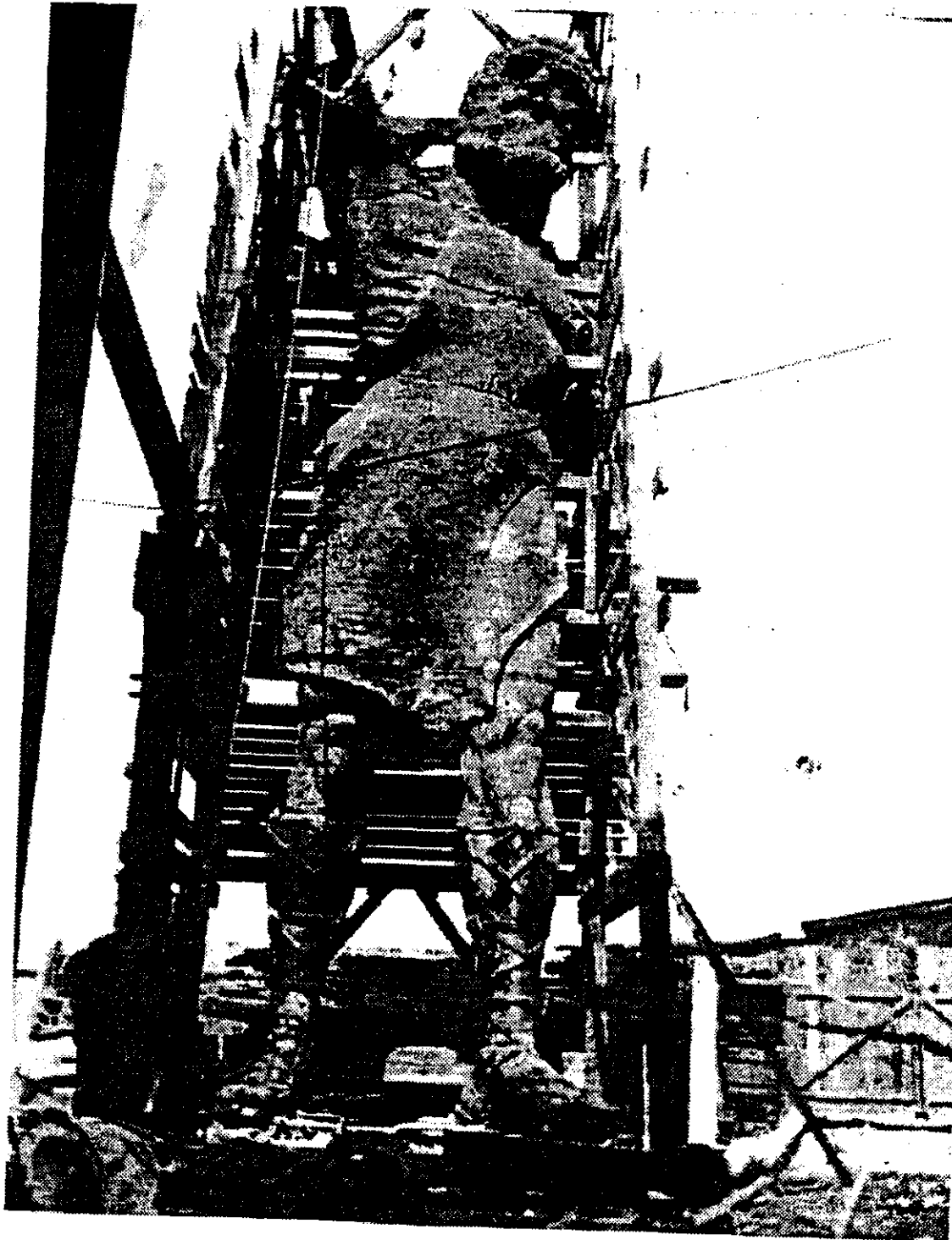


Figure #6



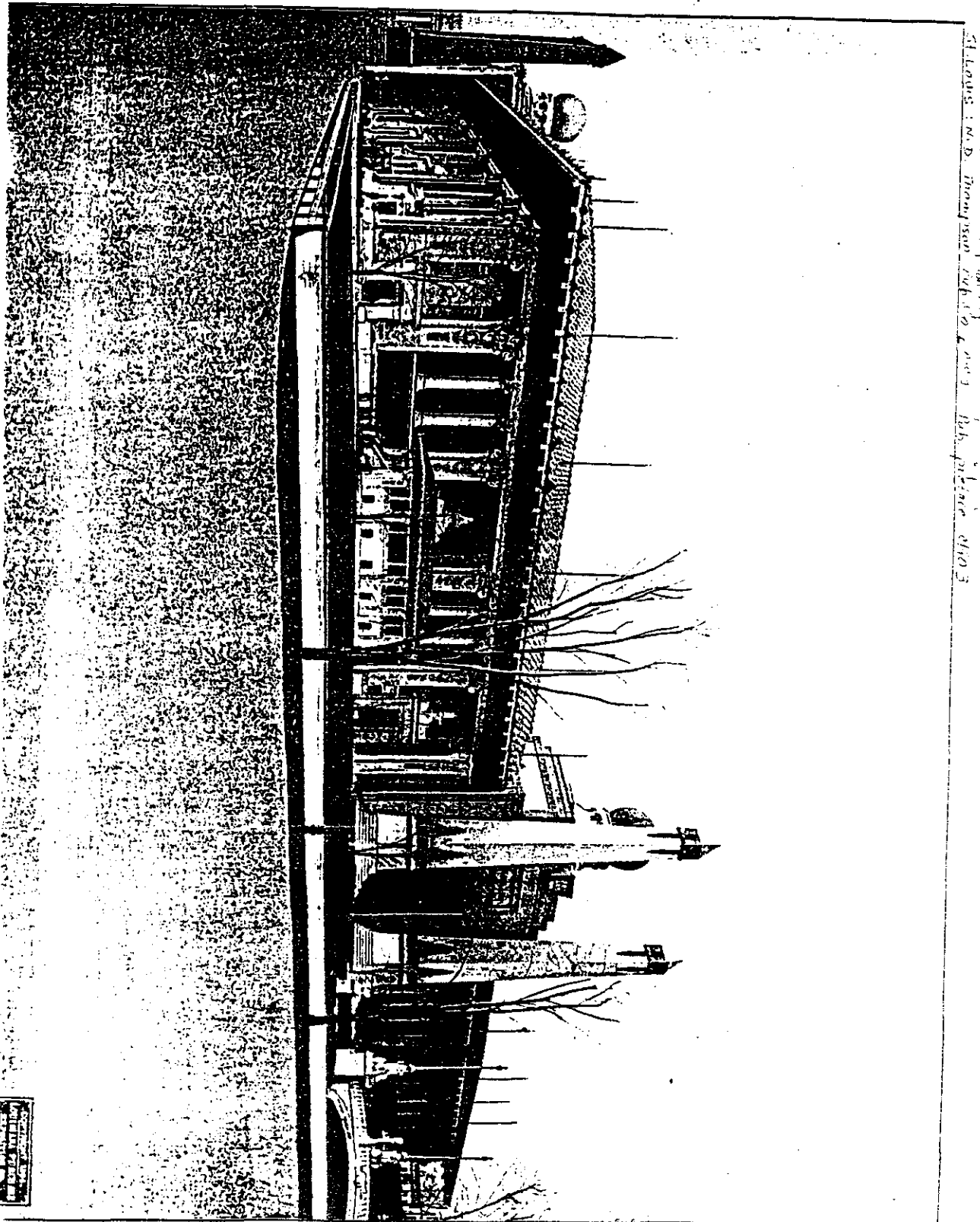
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Figure #7



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Figure #8



Copyright 1964
by the U.S. Army
Corps of Engineers
Albany, New York

Figure #9



GREAT IRON COLOSSUS, 56 FEET HIGH.

Figure #10



Figure #11



Figure #12



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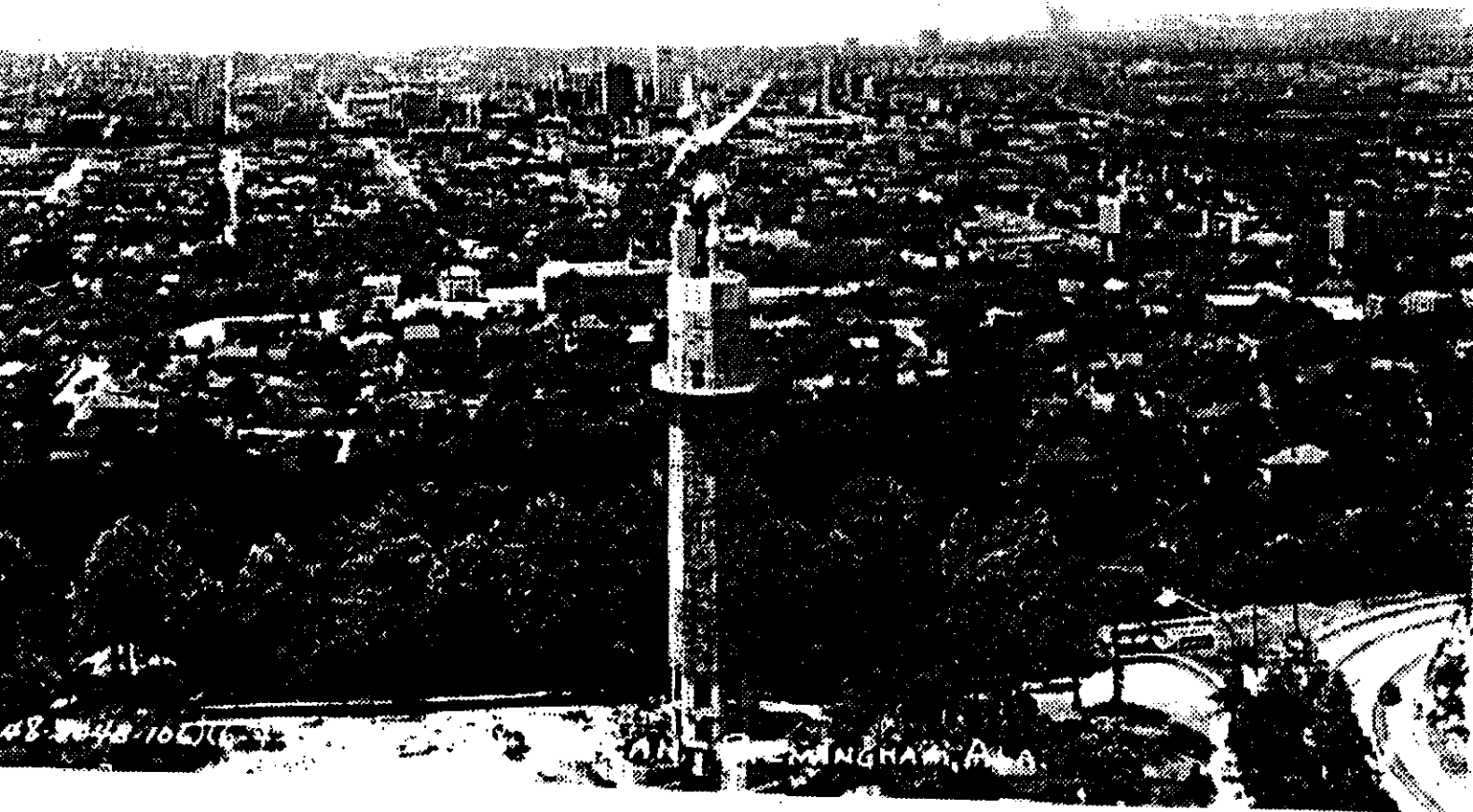
Figure #13



Figure #14



Figure #15



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Figure #16



Figure #17

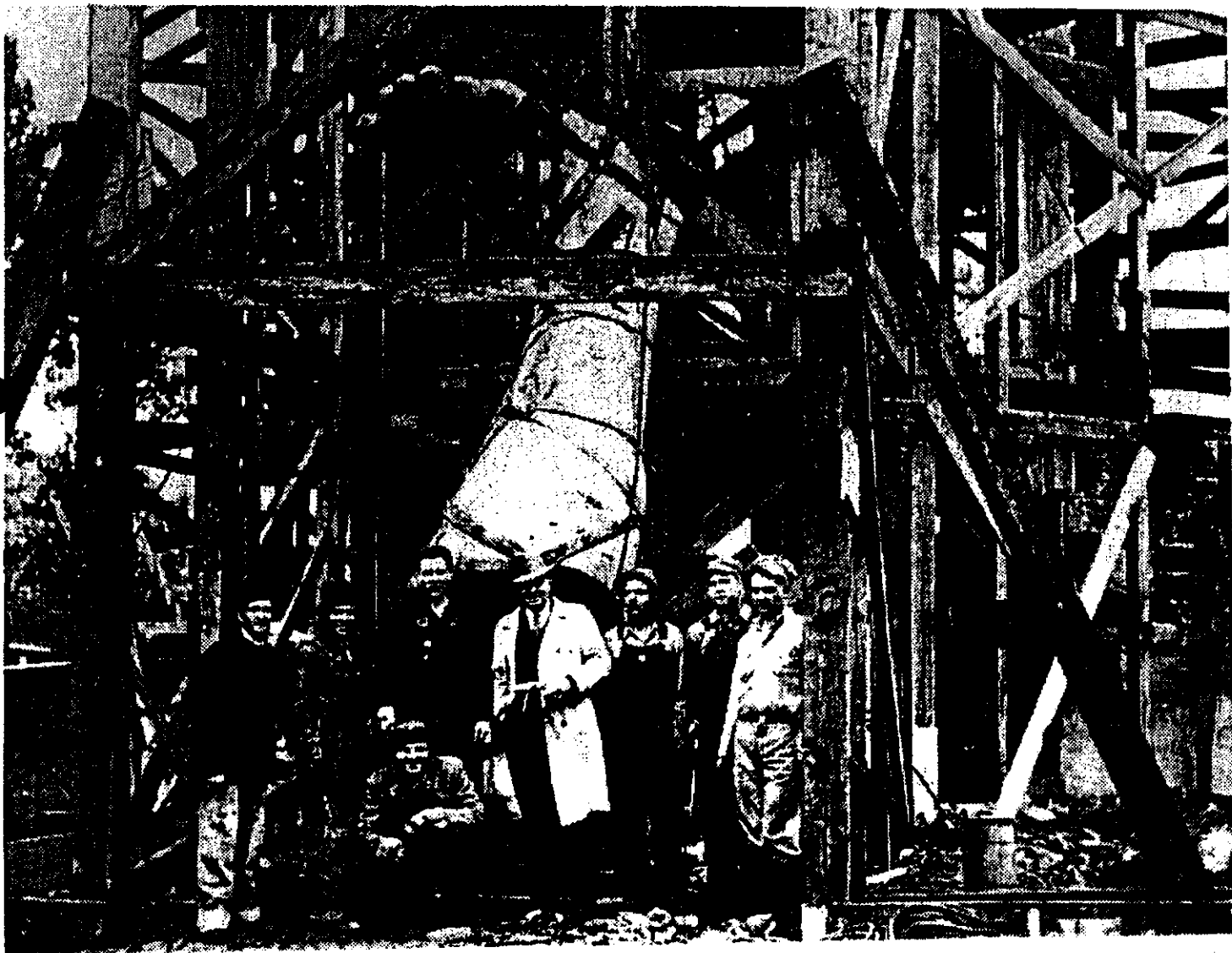


Figure #18



Figure #19



Figure #20

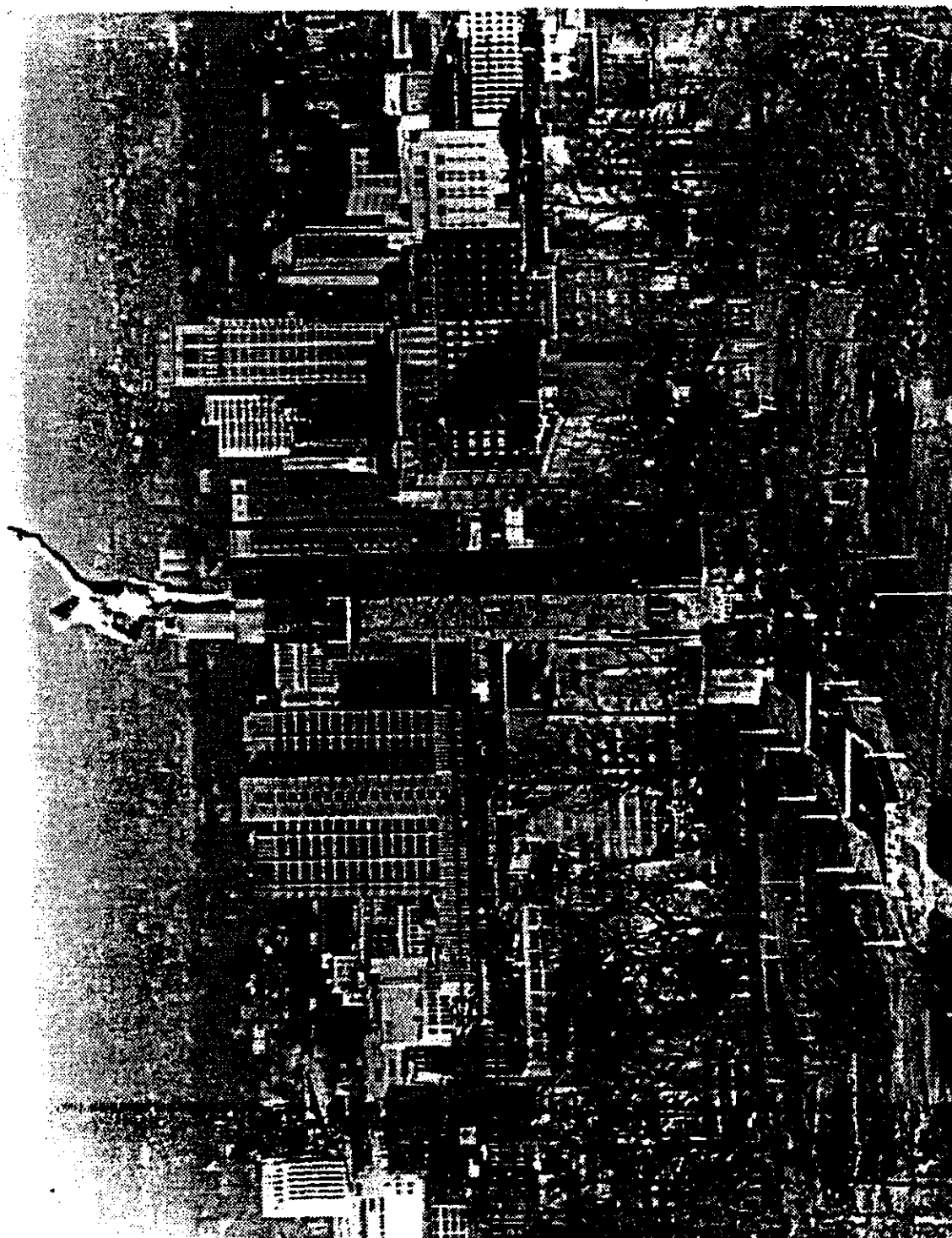
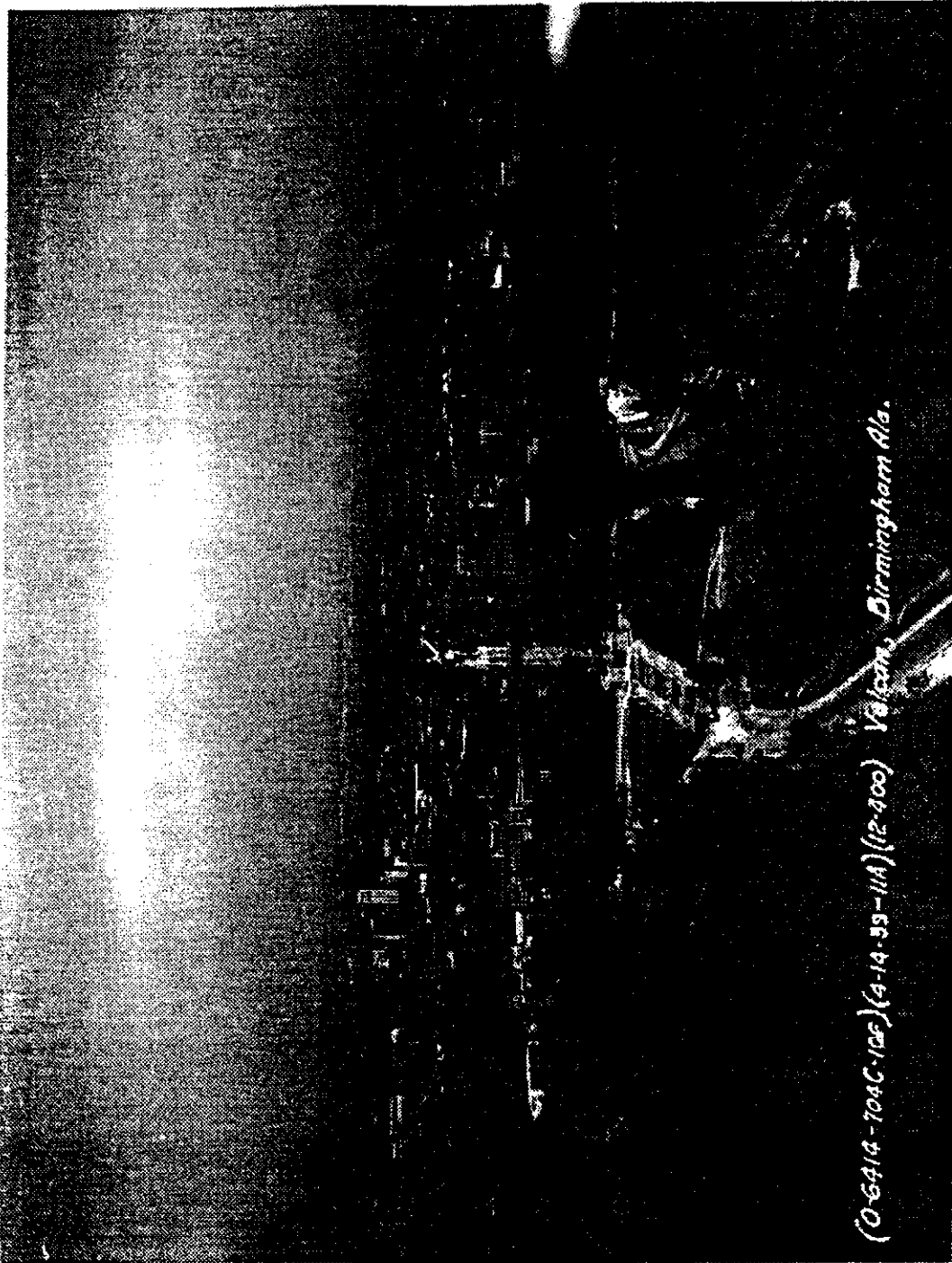


Figure #21



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Figure #22

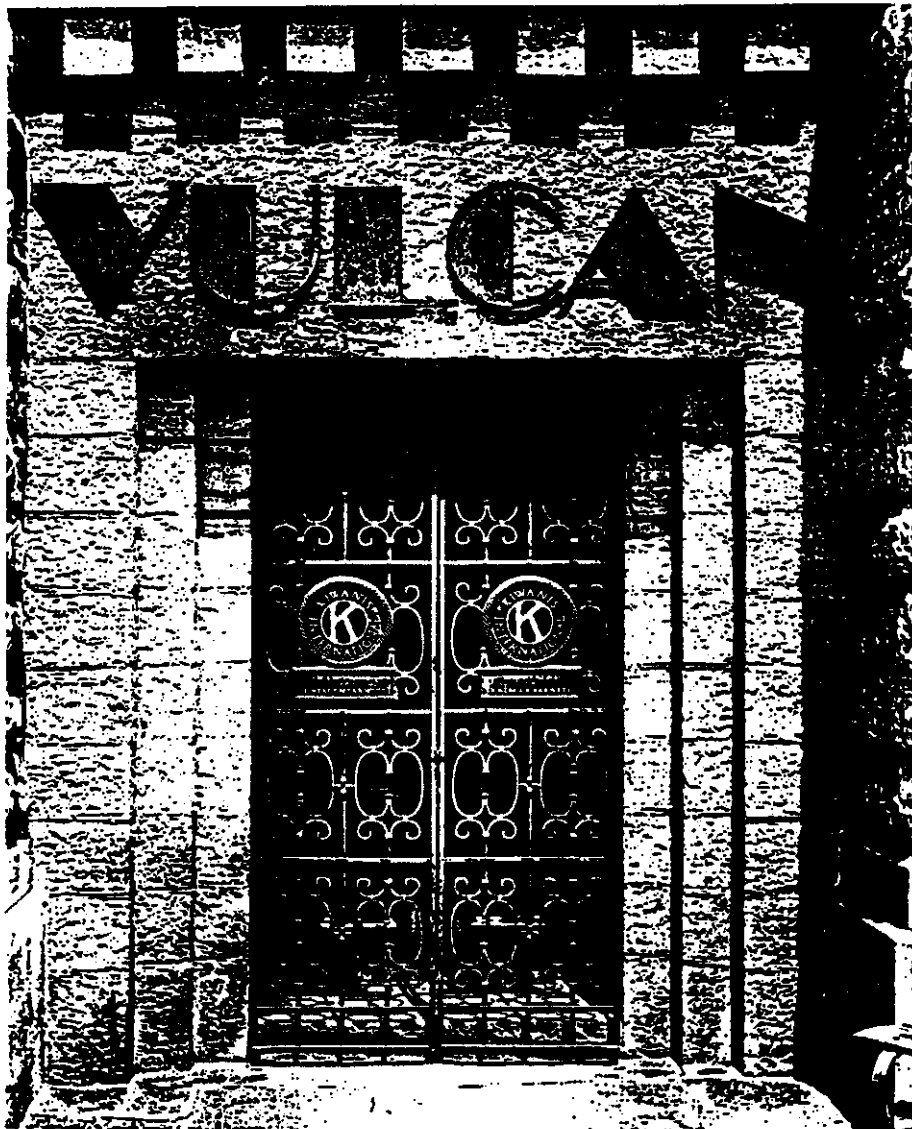


Figure #23



Figure #24



Figure #25



Figure #26

